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THE TREATMENT OF BRAIN TUMORS*

WALTER E. DANDY, M.D.

BALTIMORE

The purpose of this paper is to present a new and hopeful outlook in the treatment of brain tumors. It deals, not with a new form of treatment, for there can be, at least for the present, only one treatment, namely, surgical; but it deals rather with an intensive development of this field, largely by the innovation of new diagnostic methods and also by an entire reconsideration of old time-worn and unpractical operative procedures, and the institution, in their stead, of surgical efforts, which are directed solely to the eradication of the cause.

It is useless to deny that surgery has signally failed in its task of curing brain tumors. An occasional brilliant tumor extirpation is no answer for the great mass of failures; it scarcely more than vindicates the unsatisfactory treatment in its present form but it does indicate the possibilities of this branch of surgery with the correlation of accurate diagnosis and proper treatment. The reason for the failure of brain surgery is not far to seek; the superstructure—the art of cranial surgery—is built on a foundation of guesswork; it is too largely the product of empiricism, of trial and error. The advances of the past have been in most part individual and technical, rather than fundamental and scientific. New methods, such as those which have transformed the diagnosis of lesions of the kidneys, bladder, ureter and gastro-intestinal tract from doubt to certainty, have not been developed for the diagnosis of brain tumors. And, as a result, brain surgery has not kept pace with the rapid advances in other lines of surgery; it is still a crude and bungling effort. And how can it be otherwise when far more than half of all brain tumors have not been localizable (but operative procedures are carried out, notwithstanding)? Under such circumstances, satisfactory results must be fortunate occurrences attained in spite of the necessary indecisions, mistakes and inefficient methods which prevail. The picture of patients who have undergone a series—and usually it is a series—of fruitless cranial operations, and have then been sent home to await the inevitable outcome, is only too familiar to the physician, and the experiences too harrowing to the patient, after realizing that he has undergone them in vain. It is not to be wondered that the mention of brain surgery carries a feeling of hopelessness and an impression that, on the whole, it is hardly worth while. Indeed, even the operator of experience must often stop to ponder in like manner. As scientific methods supplant guesswork, brain surgery will enter the progressive stage.

There are, indeed, tremendous obstacles in the path of brain surgery. The technical difficulties are always great. The extensive silent areas of the brain make the localization of tumors by objective signs, both late and difficult. Exploration of the depths of the brain is hazardous and unjustifiable because of its destructive effects, unless one is certain of striking the lesion precisely and of not doing thereby more harm than good. A large percentage of brain tumors are infiltrating, and their removal requires the additional extirpation of a zone of healthy brain tissue. Many areas of the brain cannot be injured without sequelae which may permanently incapacitate the patient and render him a burden to himself and society.

Many of these handicaps seem insuperable, but others can be mastered. We must strive to determine precisely where the tumor is located; we must know exactly what effects, both direct and indirect, each tumor produces by its growth, and we must, therefore, have a clear knowledge of the anatomy of the cerebrospinal spaces and of the circulation of the cerebrospinal fluid. We must also know, by its gross appearance, the character of each tumor and the manner and rate of its growth. In the usual stereotyped treatment of more than half of all brain tumors, none of these essentials are known and no attempt is made to determine them. To command respect and confidence, brain surgery must face these defects and overcome them.

If we retrace the early stages in the treatment of appendicitis, of gallstones, of cancer of the breast, and of many other diseases, we find difficulties which at that time made the cure of these diseases appear almost equally hopeless. The transformation in mortality and the elimination of terrible after-effects are due to the development of a very early diagnosis, after which a simple and thorough treatment is instituted without delay. Appendicitis is now diagnosed in the first hours of the attack; cancer of the breast is diagnosed in the stage when only a lump can be detected and before any of the classical signs (all due to advanced processes of the growth) can be observed. And the operative results have kept pace. Let any one prevail on a patient with a breast tumor or appendicitis to delay, and he is held accountable for the results and justly so. These statements seem trite and superfluous; but in the treatment of patients afflicted with brain tumors, what a difference. Though cerebral functions

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are being daily destroyed by the presence of brain tumors, palliation and delay comprise the routine treatment in the vast majority of cases and by the foremost neurologic surgeons. And most of their treatment had far better never have been done. Neurologic surgeons have been treating symptoms and avoiding causes. They have, in simile, been awaiting an appendix abscess to develop and then incising it, or performing a local, instead of the complete, operation for cancer of the breast. And until the surgeon ceases the bungling indirect operative treatment and strikes for the cause, directly and effectively, the black eye of this field will remain justly merited. An early diagnosis, an accurate localization and an early and thorough treatment of the causative lesion will transform, and have already transformed, this barren field, as these factors have revolutionized the other fields of surgery. It is now possible to offer every patient suffering with a brain tumor all of these opportunities. Every tumor can and should be localized at once, and a large percentage of these tumors can be completely removed in the early stages.

The only rational treatment of brain tumors is dictated by the inexorable law of their growth. They are always progressive and practically always end in the death of the patient. Drugs, including the widely used iodids, are without the slightest benefit; and rays, both of radium and roentgen ray, are utterly ineffectual. There is only one possible way of curing a patient with a brain tumor, and that is by complete removal of the tumor. The natural and only sensible deduction from this fact is that the earlier the tumor is removed the better the patient's chances of life and of complete recovery. All other forms of therapy can only deceive and reduce the ultimate chances of a cure.

Before considering what can be the only rational form of surgical treatment for brain tumors, an analysis of the present operative procedures will demonstrate the reasons for their almost uniform failure. Let us see what happens to the patient both immediately and ultimately; let us look into the reasons which are given for each method of treatment and the reasons for their failure, and, therefore, why these methods must be superseded.

USES, FALLACIES AND DANGERS OF DECOMPRESSIONS

A decompression is an opening of varying size deliberately produced in the skull and dura in order to allow the brain to protrude through the defect and thereby reduce the intracranial pressure. A decompression is, therefore, merely a palliative form of treatment and is never performed with the hope of curing the patient with a brain tumor. Two types of decompression are usually made, either under the temporal muscle—a subtemporal decompression; or under the occipital muscles—a suboccipital or subtentorial decompression. In either variety, the submuscular location is chosen without particular regard to the actual location of the tumor because the muscles serve to hold in check a too great growth of the cerebral hernia, and also because the muscle is supposed to protect the underlying brain. But a protrusion of brain does not necessarily mean a relief of intracranial pressure; the pressure may or may not be altered, depending, as I shall demonstrate, on the location of the tumor which is causing the pressure.

To say that a decompression of either variety is a harmless procedure is a remark either of inexperience or of ignorance. If surgeons saw at operation the brain under a decompression several months after the operation, they would hesitate about performing this operation so casually. No matter how skilfully a decompression may be performed, the underlying brain will be irreparably damaged. Always the brain becomes adherent to the overlying temporal muscle, and collections of fluid of varying size form between the adhesions—an effort of Nature to protect the brain as much as possible from the surgeon's damage. The adhesions, of course, are greater in proportion to the size of the hernia of the brain. At times an actual cyst will form, to all appearances and for all practical purposes a protecting bursa on the brain. When we consider the fact that the temporal muscle or the occipital muscles in functioning must continually contract on the exposed protruding brain, the explanation of these insults to the living brain will at once be apparent. The poorly protected vessels are injured, and the brain consequently becomes softened. The apology that these adhesions, this destruction of brain tissue and the compensatory pockets of fluid produce no symptoms, does not suffice. It is true that important symptoms rarely follow; the operations are over silent areas of the brain which stand extensive insults before symptoms develop; but the damage to the brain tissue is certainly too great to be inflicted on any patient unless there is a very definite and urgent reason. Occasionally, these reasons are cogent; but in a vast percentage of cases, they are not, and the operation then becomes inexcusable.

Suboccipital (or Cerebellar, or Subtentorial) Decompressions.—As a procedure the primary object of which is to relieve general intracranial pressure, there is little if anything to be said in favor of a suboccipital decompression. So far as I am aware, it has never been seriously proposed for this purpose alone, though it has frequently been performed when tumors were located in the cerebrum instead of the cerebellum, usually, however, because of a mistaken diagnosis—but a mistake which is very frequently made, in fact, is difficult to avoid except by employing the newer methods of diagnosis.

When the intracranial pressure resulting from the tumor is high, a suboccipital decompression is always fraught with the greatest danger. A very high immediate mortality will result regardless of the situation of the tumor. Doubtless, the dislocation of the brain toward and through the occipital bony defect injures the medullary centers, for in fatal cases the course of events in terms of pulse, respiration and temperature is precisely like that which follows injury to the medulla from the removal of tumors in this region.

The amount of brain which can herniate through a suboccipital defect is fortunately regulated by anatomic factors and varies with the position of the tumor. Nature has protected the medullary centers by enclosing the brain-stem and cerebellum in an individual chamber —the posterior cranial fossa, which communicates with the rest of the cranial cavity by an opening—the incisura tentorii—but little larger than the brain-stem which it transmits. Inferiorly, the posterior cranial fossa communicates with the spinal canal by another opening of about the same size—the foramen magnum. The tentorium cerebelli, being a fairly inelastic and only partially yielding membrane, permits only a slight

transmission of the supratentorial pressure to the infratentorial region. Pressure disturbances of other parts of the brain do not, therefore, greatly affect this region at once and directly. Doubtless, this provision of Nature saves many lives after cerebellar explorations, for were the unrestricted transfer of pressure to the posterior cranial fossa possible, the medulla would be unprotected and incapable of withstanding the sudden insult which follows the surgeon's removal of the occipital bone and dura.

The immediate and remote results of cerebellar decompressions are most variable; at times there is a definite benefit, very often injury results, and not infrequently death quickly ensues. But the results are not capricious; they can be explained by the character of the tumor, its size and the position which it occupies in the brain. The effects which the dislocation of the tumor (if the tumor's position can be affected) will produce on structures contiguous to its altered position, or the effects which the transfer of the intracranial pressure to the posterior cranial fossa will cause can almost be predicted. Whether any material benefit is to be attained will depend entirely on the situation of the tumor. If the tumor is located anterior to the tentorium, no appreciable relief of pressure symptoms can be expected from a cerebellar decompression, for the incisura tentorii is not large enough to permit much herniation of brain into the infratentorial cavity. The injurious effects are doubtless produced by jamming the brain-stem backward and downward and possibly by the injury to the brain-stem from the pressure of the small amount of brain which herniates through the opening in the tentorium. No one would, of course, perform a cerebellar operation if he knew beforehand that the tumor was located in the cerebral hemispheres (anterior to the tentorium); but, as mentioned heretofore, such a mistaken operation is one of the most frequent in intracranial surgery, and the mistake carries with it a tremendous mortality. Aside from the immediate dangers to the life of the patient, the after-results of a cerebellar decompression on the patient may be various, partial or complete paralyses of the extra-ocular muscles or even injuries to the seventh and eighth and other cranial nerves on one or both sides—in other words, injuries to any of the cranial nerves issuing from the brain-stem in the posterior cranial fossa. In addition, there are usually serious disturbances of equilibrium and gait, owing to injury of the cerebellum and the pyramidal tracts in the brain-stem. These injuries may be temporary or permanent. A large unsightly hernia always follows a fruitless cerebellar decompression, regardless of the position of the tumor. When the tumor is situated in the brain-stem or in the supratentorial region, this swelling is mainly made up of fluid because the cisterna becomes partially or totally obstructed and stasis of fluid naturally follows up to the obstruction. The formation of a layer of fluid to cover the cerebellum has previously been mentioned and is a compensatory mechanism to prevent injury to this region from trauma. If the tumor is located in the cerebellum, the operative hernia is made up to a great extent of tumor tissue and less of fluid. But the external appearance of a postoperative cerebellar hernia gives no indication of the location of the tumor in the brain.

The effects of a suboccipital decompression are essentially the same whether the tumor is located in the midbrain or in the cerebral hemispheres, for the disturbed mechanical factors are similar. An internal hydrocephalus invariably follows tumors of the mesencephalon, owing to the closure of the aqueduct of Sylvius. A tumor in this region cannot be dislocated sufficiently to release the occlusion of the aqueduct; and the hydrocephalus persisting, no possible relief can follow the cerebellar decompression.

Only when a cerebellar tumor is present can a suboccipital decompression be in the slightest degree beneficial. A certain amount of relief will usually but not invariably be obtained, the effect depending on the exact location of the growth. The relief, when obtained, is due to two factors, both mechanical: (1) The tumor, being confined to the cerebellar fossa, receives added room for its expansion, and (2) the removal of bone in many instances allows the tumor to lift from the fourth ventricle and at times even from the posterior end of the aqueduct of Sylvius, so that these channels, together with the foramina of Luschka and Magendie, can again discharge the pent-up cerebrospinal fluid. For the time being, therefore, the development of the internal hydrocephalus may be held in check. It need hardly be added that the symptoms of intracranial pressure in cerebellar tumors are always due to the internal hydrocephalus which results from the closure either of the aqueduct of Sylvius or of the fourth ventricle (including the three foramina of exit —the foramina of Luschka and Magendie) the exact channels occluded depending on the situation of the tumor, but the result in any case is exactly the same. While cerebellar operations are always dangerous in any type of tumor they are less so when the tumor is in the cerebellum, because it is possible to favorably alter the local pressure as well as to relieve the secondary pressure due to the hydrocephalus. The duration of these benefits will naturally depend on the rate of growth of the tumor, and also on its character, i. e., whether the tumor is circumscribed or infiltrating. The symptoms due to tumors within the cerebellar lobes will be much more benefited than those due to tumors without, as for example cerebellopontile tumors. In the former the tumor's position will change with the relief of pressure, but in the latter, the growth is so firmly embedded as to be practically immobile, and to be deprived of any benefit, either direct or indirect, from the decompression. Cerebellar decompressions, therefore, are beneficial only in a restricted group of cases of brain tumors (cerebellar tumors) and the benefit is, of course, transitory. In all other cases of brain tumor, a cerebellar decompression carries an appalling danger to life and serious injurious effects when life is spared.

Subtemporal Decompressions.—These have attained the greatest popularity in the treatment of brain tumors. Unfortunately, a subtemporal decompression has come to be regarded as a simple and harmless procedure which should be performed more or less as a routine in all cases of intracranial pressure. There is no greater mistake in the treatment of brain tumors. The operation itself is indeed simple enough and can doubtless be executed with equal facility by any number of surgeons; but it is far from a safe performance, and as a routine treatment it is anything but a sane procedure. As a more or less routine operation in the treatment of brain tumors, there is little that can be said in its favor. Certainly, it is

productive of infinitely greater harm than good.[1] There was a period when decompression was the utmost which could be offered the patient; but that time has passed, and, having passed, the operation must cease to be used as a primary palliative procedure.

About half the total number of brain tumors are located in the brain-stem or cerebellum and, therefore, give rise to hydrocephalus because, as stated above, the aqueduct of Sylvius and the foramina of Magendie and Luschka become occluded. There is no conceivable way by which even the slightest benefit can be derived from a subtemporal decompression in any case of hydrocephalus, for the cause of the hydrocephalus—the obstruction—has in no way been affected; but in all such cases, the brain is irreparably damaged by the decompression. In hydrocephalus, the cerebral ventricles dilate as rapidly as the protective coverings of the brain, i. e., the dura and skull, will permit. Remove these, as in a decompression, and the brain protrudes as far as the new coverings of muscle and skin will permit; but there is in nowise any reduction of intracranial pressure. On the contrary, the extra space which results (the cerebral hernia) is at once replaced by a new increase of intraventricular fluid, made possible by a local enlargement of the lateral ventricle. While usually the operative procedure is not formidable, in advanced grades of intracranial pressure, the patient is very ill, indeed, may be unconscious, so that he is unable to withstand a useless procedure, and death ensues, whereas if the cause, frequently a cerebellar cyst, is attacked directly, life will often be saved.

The foregoing criticism applies equally strongly to all cases of cerebral tumor in which a unilateral or a localized hydrocephalus—by no means infrequent accompaniments of tumors in the cerebral hemispheres—has resulted. In no form of hydrocephalus can the patient be benefited; the general manifestations of intracranial pressure remain unchanged; the headaches continue; the loss of eyesight progresses; the brain contained in the bulging hernia is permanently injured; a large unsightly deformity results and adds an increased burden to the patient, in that he can no longer lie on the operated side, and in compensation for the damage—nothing.

But the greatest harm of a subtemporal decompression has not yet been mentioned. It lies in those very cases in which the greatest good has been claimed for the operation, in those cases in which the tumor is in the cerebral hemispheres and is not causing hydrocephalus; in those cases in which there are no signs by which the tumor can be localized; in those cases in which the decompression relieves all the symptoms of intracranial pressure. What is the result in these cases—not the immediate and transient, but the ultimate, result? For a brief time, they have been helped; the headaches disappear; the choked disk diminishes; the eyesight may improve. But view the future; these patients must always return. The invariable law of growth of brain tumors makes the respite brief at best. The decompression, growing gradually tighter and tighter as the tumor increases in size, soon loses its value, and the old signs and symptoms of intracranial pressure return. During the time which has lapsed since the decompression, the tumor may have grown sufficiently to encroach on the precentral or postcentral fibers, the visual tracts, the centers of speech or some other part of the brain whose affection is pathognomonic. In other words, localizing signs of the tumor's position may have developed from its growth. To the exponents of a decompression operation, this is the result to be most highly desired. If, however, no localizing signs appear during this time, the patient's condition at best returns to that which obtained before the decompression.

But what a sad commentary on our intracranial localization and treatment. When an autolocalization has developed in these cases, the size of the tumor has greatly increased. Its removal is far more difficult. Its removal, if now possible, will probably leave the patient with a residual paralysis or some other more or less complete and permanent sequela—and the sequela which has made the localization possible. In other words, by performing a decompression we have given the patient a brief period of relief—an accomplishment as previously mentioned, not so unlike that of giving morphin for abdominal pain or of performing an incomplete operation for cancer of the breast. The symptoms have been masked for a time; but in doing so, we have removed the one big opportunity, i. e., of locating and removing a tumor in its early period of growth and at a stage when the patient could often be left a useful member of society.

FUNCTIONS AND DANGERS OF EXPLORATORY CRANIOTOMIES

As its nomenclature indicates, this type of operation is a crude method by which an occasional tumor may be found when no signs have betrayed its location. Exploratory craniotomies have been of distinct, though limited, service in cranial surgery. A craniotomy properly performed should locate or exclude any superficial growth in about a third of the brain's surface; the entire outer surface of one hemisphere, and the inferior surface of the frontal, temporal and occipital lobes can usually be inspected, but, at best, the other two thirds of the brain's surface and all of the interior of the brain must escape observation. A distinct advantage lies in the fact that a decompression, should it be indicated, can be performed simultaneously and with no extra hazard to the patient. While a combined craniotomy and decompression is more dangerous than a decompression alone, the possibilities are greater. The information gained is often definite in contrast to the continued uncertainty of intracranial conditions after a decompression alone. Should a tumor be found and should it prove to be a large infiltrating glioma, a more efficient palliation can often be obtained by removal of the bone flap, with or without the added subtemporal bony defect, thus giving the maximum amount of relief which can be offered the patient with an inoperable tumor.

But the same dangers which have been mentioned in connection with decompressions obtain, to an even greater degree, in craniotomies. An exploratory craniotomy should never be performed if a hydrocephalus is present. There would, of course, be no object in performing a craniotomy if a hydrocephalus

1. This statement refers only to decompressions in the treatment of intracranial pressure due to neoplasms of the brain. In cases of acute intracranial pressure resulting from injuries, decompressions have a distinct and admirable function; here, this procedure saves many lives; but even so, it has been far too indiscriminately and incautiously used. It should be employed even in fractures of the skull only when backed by a mature judgment. These patients are usually in serious condition and can ill afford any additional operative insults, which are misplaced. There can be little doubt that, on the whole, patients would stand a better chance of recovery with a fractured skull if all were left alone, than if all were operated on. In the hands of the expert, the chances of recovery are greater when operations are performed, for he uses them only in cases selected because of definite indications. This statement also applies only to a decompression as a primary operation. A decompression must often be made as a secondary feature of craniotomies in which a tumor has or has not been removed.

is present (except in unilateral or localized hydrocephalus), for, except in rare instances, the tumor would be located in the region of the brain-stem. In symmetrical hydrocephalus, the growth must obstruct a channel between the aqueduct of Sylvius and the foramen of Magendie. Many craniotomies are performed when the operator does not know whether or not a hydrocephalus is present. The simple determination of the existence of hydrocephalus would, therefore, eliminate a tremendous number of useless, harmful and dangerous craniotomies and decompressions.

Should a mistake be made and a craniotomy be performed in the presence of hydrocephalus, the dura should be carefully closed to avoid cerebral injury. Under these conditions, a decompression should, of course, never be performed. In very ill patients, a craniotomy, with or without a decompression, is too big and too serious to be performed without very good reasons to suspect the location of the tumor. Exploratory craniotomies, being of routine position, rarely adequately expose a tumor which is found accidentally. It is usually necessary to remove much more bone directly over the tumor after it has been disclosed and before its removal can be safely attempted.

With the advent of the newer methods of diagnosis, an exploratory craniotomy is never necessary; a correct diagnosis likewise leaves no excuse for performing a craniotomy when hydrocephalus is present. When a craniotomy is performed, it should be made with a clear idea of the tumor's location, so that the operative exposure of the tumor will be both ample and direct.

Puncture of the Corpus Callosum—Balkenstich.—This procedure has been proposed, as a palliative treatment, even as a cure for hydrocephalus. It has not the slightest value in either function. It is based on an entirely fallacious concept. In the first place, fluid released from the roof of the third ventricle passes into the subdural space where it cannot absorb, except in small amounts, because this space is lined on both sides by an avascular membrane. To be absorbed, fluid must reach the subarachnoid space, and cerebrospinal fluid can enter this space only through the cisternae, which act as central distributing stations for the subarachnoid spaces. Fluid so released becomes encysted. Even should adequate absorption be possible in the subdural space (which cannot be), the opening in the corpus callosum must inevitably close, since the neuroglia proliferates in obedience to Nature's method of healing wounds. Hydrocephalus due to a tumor can at present be cured only by removing the cause, i. e., the tumor.

Lumbar Puncture.—This is another procedure which should be used with great caution. In patients with brain tumor, it has no useful purpose, but is accompanied by danger. I have seen at least four deaths following lumbar puncture, and many other patients have had distressing symptoms for many days. The danger lies in the sudden entrance of portions of the cerebellar lobes into the foramen magnum when the spinal fluid is released; the herniated cerebellum, being caught in the bony ring, compresses the medulla and upper spinal cord.

Were there any benefits to be gained commensurate with the risk which is always present, lumbar punctures might be sanctioned; but there is no information which cannot be obtained in better and safer ways. To know the increased pressure of the spinal fluid is occasionaly helpful; but usually this can be told without a puncture. The cell count and other examinations of the cerebrospinal fluid are rarely needed for a differential diagnosis; but in the few cases in which this information is deemed necessary, and intracranial pressure is known to exist, it had far better be obtained by performing a ventricular puncture, which can be done with less risk to the patient. I rigidly follow the rule, not to perform a lumbar puncture when a brain tumor is strongly suspected or known to be present. In this connection, I might add that intraspinal injections of air are used only after the intracranial pressure has been relieved by a ventricular puncture.

Ventricular Puncture.—This is a most useful procedure—not as a therapeutic measure but as a diagnostic aid. In adults, it can easily be performed under local anesthesia; in growing children, puncture can often be made with a sharp needle through a patent anterior fontanel. There is, of course, no conceivable way that more than a very transient therapeutic benefit can be derived from a ventricular puncture, for all the cerebrospinal fluid which is removed reforms again within a few hours. The dangers of a ventricular puncture are distinctly less than in any other operative procedure. The principal danger is the occasional puncture of an intraventricular tumor, causing intraventricular hemorrhage which can quickly result in death. At times, the results of a ventricular puncture will make a diagnosis of hydrocephalus; but one must be very sure of the findings, which are easily misleading and easily misinterpreted. It is much more important to determine the thickness of the cerebral cortex, than the amount of fluid which can be obtained by ventricular puncture. The former determination is absolute; the latter is relative and purely an index of pressure and not of the size of the ventricle. At times the dislocated position of the ventricle will strongly indicate the approximate position of the tumor and not infrequently a cyst or abscess will be accidentally punctured, making the diagnosis. But the real value of a ventricular puncture is in the portal of entry it offers for the intracranial diagnostic study, which will be discussed in the following pages.

THE RATIONAL TREATMENT OF BRAIN TUMORS

What, then, is the treatment for brain tumors? The answer is simple and permits of no equivocation: (1) an early diagnosis of brain tumor; (2) a precise localization; (3) an accurate and adequate operative approach to the tumor with the object of (4) removal of the tumor in toto if possible, and (5) when the tumor cannot be removed, to produce the maximum palliation at the same operation. To sum up, the rational treatment consists of an early and accurate diagnosis and early and thorough operation on the tumor directly. This is not a theoretical formula; it is the actual treatment which every patient should obtain, and which he now has a right to demand.

The results which surgeons will obtain will be dependent on the early stage at which the diagnosis and localization of the tumors are made. We are now receiving patients afflicted with brain tumors far too late; too many are blind from long continued intracranial pressure; too many arrive in coma, or are paralyzed or are the victims of aphasia. We must learn to detect the early symptoms and signs of intracranial pressure, as well as the focal manifestations. It is due the patient that headaches or pains in the head, unexplainable vomiting, unusual malaise, visual disturbances—dimness of vision, hemianopsia, diplopia,

transient amblyopia—any focal, motor or sensory disturbances and all unusual epileptic attacks, any disturbances in gait, etc., should be thoroughly investigated by one of adequate experience to pass on the intracranial possibilities in a decisive manner.

There is an erroneous conception that brain tumors are rare. This is in large part due to mistaken and uncorrected diagnoses, and to the varied manifestations which make the diagnoses confusing and difficult. In the Johns Hopkins Hospital, brain tumors rank third in frequency, being exceeded only by tumors of the breast and uterus. The diagnosis of a brain tumor may be very simple or extremely difficult, depending on the size of the growth, its situation and the rapidity of the growth. At times, progressively increasing focal disturbances will make the localizing of a growth possible before its existence has been suspected by symptoms of intracranial pressure. But in the vast majority of cases, even in the comparatively late stages of the disease, all the resources at our command will be exhausted before a diagnosis, and particularly a localization, can be determined with certainty. In every case in which a careful anamnesis and neurologic and roentgenologic examinations are of no avail (and this group comprises half the cases of brain tumors), the tumor can be diagnosed and located or its existence eliminated by cerebral pneumography.[2] These statements are not intended to convey the impression that air is to be injected into the brain of every patient who has symptoms which may be regarded with suspicion. A neurologist or neurologic surgeon of large experience can differentiate the vast majority of cases of tumors from other lesions. The procedures are used only when imperative and when all other means fail to reach a diagnosis and localization. The physician and the patient will no longer be content with the diagnosis of an unlocalizable brain tumor and with the train of indirect and useless operations which are the sequel of this diagnosis. Nor will they be willing patiently to await paralyses, blindness and aphasia to make the localization. When confronted with the facts, there are few patients or few parents who would prefer the partial or transient results of palliative (all too frequently pseudopalliative treatment to the permanent results of a tumor extirpation, after giving due consideration to the relative risks assumed. Just as the urologist accurately localized lesions of the kidney and ureter by filling the urinary channels with thorium or collargol, so the neurologic surgeon now fills the spaces of the brain—the ventricles on the interior and the subarachnoid spaces on the exterior—and localizes the intracranial lesion by the effect, either direct or indirect, of the tumor on these fluid-containing spaces.[3] And all brain tumors must produce pathognomonic changes on some part of these spaces. Certain tumors obliterate a part or all of one ventricle; some protrude into a ventricle; others dislocate one or more ventricles; again they may cause a part or all of the ventricular system to enlarge; others close portions of the subarachnoid spaces. By a series of roentgenograms, the entire system of spaces can be demonstrated, and any abnormality in these spaces will at once be apparent. I have now had opportunity in more than 200 injections to locate tumors in every part of the brain, and I have yet to fail to make an accurate localization, nor have I failed to find this tumor at operation. Some of these tumors have been far below the surface of the brain; in fact, so far, that there has not been the slightest change in the surface of the cerebral or cerebellar convolutions or sulci to suggest that a tumor was beneath. In other words, the evidence from cerebral pneumography has been so absolute that we were sufficiently certain of the tumor's location as to make a transcortical incision of varying depth until the tumor was exposed at the position it was expected to be found. At times, it has been possible completely to remove such growths, when, except for the pneumographic record, there would have been absolutely no other way of knowing the situation of the growth. In many comatose patients the localization has been made and the tumor successfully removed.[4]

If it is the duty of the surgeon to localize a tumor, it is equally his duty to find it at operation. With an accurate localization, this should always be possible now, though in certain locations, particularly in the region of the speech-centers, this may be inadvisable. In any event, one can know the exact situation of the tumor, and should its removal be impossible or inadvisable, a decompression can then be made. Furthermore, by precisely localizing the tumor, the operator can regulate his operative wound accordingly and make the exposure directly over the tumor instead of in the usual stereotyped position. With accurate diagnosis, it is surprising how many apparently inoperable tumors can be directly approached and completely removed. I have removed tumors from the lateral ventricles, from the aqueduct of Sylvius, the fourth ventricle, large tumors of the pituitary body, the cerebellopontile angle and recently of the pineal body. In other instances, I have removed entire lobes of the brain, with the corresponding part of the ventricles. There is a very mistaken view concerning the operative mortality of brain tumors. I am confident that there is far less mortality after removal of tumors in the cerebral hemispheres or cerebellum than after fruitless operations in which the tumor has been sought, but not found, or in which the tumor has been found and could not be removed. The big cause of death in these cases of cranial surgery is an acute exacerbation of the intracranial pressure, which results from direct or indirect injury to the brain by the operative procedure and which is added to the original pressure existing before the operation. All brain tumors should be removed with painstaking care and with a minimum of trauma. Successful results can be obtained only through a very large exposure and one which is directly over the tumor. There is usually little excuse for rapidly scooping out a tumor and then furiously packing to control the hemorrhage. Certainly, with such crude methods, the mortality will be high and the tumors will almost always be incompletely removed, making a recurrence practically certain. Tumors in deep and inaccessible locations and tumors of the endothelial type, which are usually exceedingly

2. This term has been suggested by Professor Halsted, who has been so largely responsible for the inception and development of these procedures and for their application. Roentgenography of the brain after either intraventricular or intraspinal injections of air, or after both injections, is included in this nomenclature.

3. A very urgent warning should accompany this statement. The introduction of air into either the cerebral ventricles or the spinal canal is not a harmless procedure. It is fraught with great danger to the patient. It should be used only by one skilled in intracranial surgery and with experience in the use of the method. It is safe only in safe hands. Its widespread use will certainly lead to a very high mortality. The details of these procedures are given in the following articles by the author: (1) Ventriculography Following the Injection of Air into the Cerebral Ventricles, Ann. Surg. **68**: 5 (July) 1918; (2) Roentgenography of the Brain After the Intraspinous Injection of Air, Ann. Surg. **70**: 397 (Oct.) 1919; (3) Localization or Elimination of Cerebral Tumors by Ventriculography, Surg., Gynec. & Obst. **30**: 329 (April) 1920.

4. The detailed findings from the use of cerebral pneumography will not be considered here. They will appear shortly in another communication.

vascular, still offer tremendous difficulties in extirpation; but with careful, painstaking efforts and with proper judgment, most of these can be removed with safety if the patient's vitality has not been too greatly reduced by the ravages of the disease.

If it is demonstrable beyond all question that a complete extirpation of the tumor is impossible, either because of its infiltrating character or because of its inaccessible location, or because of probably permanent injury to the speech centers or motor areas by reason of its removal, then and only then should a decompression be made for palliation, provided of course the tumor is in such a location that a decompression will perform a useful function. When hydrocephalus is a sequel of the tumor, and the removal of the tumor is impossible, a decompression or other surgical attempt at palliation is absolutely contraindicated because, as I have previously demonstrated, it can do no possible good. A decompression, when indicated, is therefore a procedure of last resort, one to be used when direct removal of the growth is impossible or contraindicated, and it is by all means not a procedure to be used early in the disease, when the tumor cannot be localized, for thereby the patient's greatest opportunities will be sacrificed.

SUMMARY AND CONCLUSIONS

1. Brain tumors are among the most frequent neoplastic lesions; their growth is always progressive and almost always leads to a train of terrible sequelae and eventually to death.

2. There is only one form of treatment for tumors of the brain—operative removal, and this must be complete.

3. To obtain the best operative results, brain tumors must be diagnosed and localized in the earliest stages.

4. It is now possible to diagnose and localize practically every tumor, and in the early stages. When all other signs and symptoms fail in the localization, cerebral pneumography will make the diagnosis and localization with precision and without equivocation. And when a tumor is not present, it can be excluded by the same method.

5. The operative approach will be dictated by the precise localization. The approach should afford adequate room, and it should be directly over the tumor.

6. After correct localization, all brain tumors should be disclosed at operation.

7. Every effort should be made to cure the patient by complete extirpation of the growth. There is less mortality from carefully performed tumor extirpations than from unsuccessful explorations for tumors. When, for any reason, it is impossible or unjustifiable to remove the tumor, the maximum palliative relief should be given at the same operation.

8. Decompressions, routinely performed, are among the most harmful and indefensible operations in surgery. They should never be performed for unlocalizable tumors. They are the exact equivalent of giving morphin for abdominal pain; the symptoms are masked until it is too late.

9. Decompressions should be performed only as a last resort—when the tumor cannot be removed; and then only after the location of the tumor is known, for in half the cases of brain tumor, no good can possibly be derived from a decompression.

10. Exploratory craniotomies for brain tumors are now scarcely ever indicated. The tumor should be precisely localized before any operative procedure is attempted.

11. Scientific accuracy must supplant guesswork in diagnosis and in directing the treatment. Early and accurate localization and thorough operative treatment will eliminate all unnecessary and harmful operations. The treatment of brain tumors can only be a direct eradication of the cause—prompt and efficient.

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A METHOD FOR THE ADMINISTRATION OF SODIUM CHLORID FOR HEADACHES *

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Increased intracranial pressure has long been recognized as a cause of headache; to this type the term "tension headache" has been applied. It is a question whether this apparent relationship between increased intracranial tension and headaches can be carried further. We do not know the cause of headache in the febrile diseases, in the various toxemias resulting from intestinal stasis, or in the periodic "idiopathic" variety. Certainly the most reasonable explanation is that any one of these primary conditions raises the intracranial pressure to a certain extent and thus gives rise to headache.

Following the work of Weed and McKibben,[1] which demonstrated that the pressure of the cerebrospinal fluid could be markedly reduced by intravenous injections of concentrated solutions of the common sodium salts, Cushing and Foley [2] found that similar reductions of the fluid pressure could be accomplished by the simple alimentary ingestion of strongly hypertonic solutions. In another paper (Foley and Putnam [3]), Cushing drew attention to the fact that headaches, following intestinal stasis, were relieved by the administration of saline purgatives long before the cathartic action of the drug itself had taken place.

The use of strong solutions of the common salts, therefore, in the treatment of headaches was an obvious application of these established experimental findings. Because of the relatively high osmotic pressures of its solutions and because of its comparative harmlessness, sodium chlorid was selected as the salt for human administration. That both the sodium and the chlorid radicals are absorbed in the intestine was also considered an advantage, as no drastic purgation would follow its use.

The ingestion of crystalline sodium chlorid or of concentrated solutions of the salt in quantities sufficient to have the desired physiologic effect was a problem which at first presented some difficulties. Persons suffering from severe headaches were found to have considerable trouble in retaining the salt for a length of time sufficient for it to pass into the intestine, where its absorption into the blood stream could take place. The

* From the Anatomical Laboratory, Johns Hopkins University.

1. Weed, L. H., and McKibben, P. S.: Pressure Changes in the Cerebrospinal Fluids Following Intravenous Injection of Solutions of Various Concentrations, Am. J. Physiol. **48**: 512 (May) 1919; Experimental Alteration of Brain Bulk, Am. J. Physiol. **48**: 531 (May) 1919.

2. Cushing, Harvey, and Foley, F. E. B.: Alterations of Intracranial Tension by Salt Solutions in the Alimentary Canal, Proc. Soc. Exper. Biol. & Med. **17**: 217, 1920.

3. Foley, F. E. B., and Putnam, T. J.: The Effect of Salt Ingestion on Cerebrospinal Fluid Pressure and Brain Volume, Am. J. Physiol. **53**: 464 (Oct.) 1920.

nausea following the ingestion was often considered more distressing than the headache itself. This irritating action of the salt in the stomach, however, has now been obviated by the preparation of compressed tablets salol-coated, each containing 1 gm. (15½ grains) of sodium chlorid.[4] Such tablets pass unchanged through the stomach, yet liberate the salt when the alkaline secretions of the small intestine are met.

The clinical use of these tablets has been somewhat limited thus far, but at the same time sufficient observations have been made to show that they have a beneficial effect in practically all of the milder forms of headache. They are of a size easily swallowed, are nonirritating in the intestinal tract, and usually relieve the headache in from thirty to forty-five minutes. From two to three tablets should be taken every five minutes with as small an amount of water as possible, up to a total of eight or ten. In severe headaches from twelve to fifteen or even more may be necessary. The administration of as much as 30 gm. (nearly 1 ounce) of sodium chlorid is in a healthy adult wholly safe and is far beneath the toxic limit. Contraindication to the use of salt is found only in certain cases of nephritis, hypertension and in persons past middle age whose salt tolerance is known to be low.

In a study of the effect of relatively large intravenous injections of concentrated solutions of sodium chlorid on the systemic circulation, Weed and Hughson [5] have shown that marked changes in the arterial and venous pressures occur only during the period of injection. They have also found that the intravenous injection of 1 gm. (15½ grains) of sodium chlorid per kilogram (2⅕ pounds) of body weight reduced the cerebrospinal fluid pressure in young experimental animals 234 mm. of Ringer's solution, while in older animals the average reduction was 80 mm., negative pressure in both groups of animals usually resulting. So great a reduction of the pressure of the cerebrospinal fluid for the relief of a tension headache would seem quite unnecessary. So far as these figures can be applied to man, we may assume that the cerebrospinal fluid pressure can be reduced approximately 50 mm. by the ingestion of ⅙ gm. (2½ grains) of sodium chlorid per kilogram of body weight. Greater reductions could be obtained by a proportional increase in the dosage.

With the experimental evidence establishing a physiologic basis for the clinical use of such a benign therapeutic agent, the treatment of headaches with these tablets possesses advantages over the employment of the various coal tar products. It is for this reason that the publication of this note seemed warranted; extended clinical observations which are being made at the present time must, however, be carried out before an opinion of real value can be given regarding their action. There is no reason for believing that all forms of headaches will yield to this method of therapy, for only that variety due to increased intracranial tension offers hope of responding to the increase in salt content of the blood. Foley [6] has already reported favorable results in the tension headaches due to tumors and hydrocephalus, using simply the plain sodium chlorid. But the administration of sodium chlorid in the manner suggested should prove of diagnostic value in differentiating the headaches due solely to the heightening of the intracranial tension from those of other origin.

4. Salol coated pills would serve the same purpose and can be prepared by a qualified pharmacist, while the tablets probably would have to be obtained from some pharmaceutical manufacturing house.

5. Weed and Hughson: Systemic Effects of the Intravenous Injection of Solutions of Various Concentration, with Especial Reference to the Cerebrospinal Fluid, Am. J. Physiol. **54**: 53, 1921.

6. Foley, F. E. B.: Clinical Uses of Salt Solution in Conditions of Increased Intracranial Tension, Surg., Gynec. & Obst. **33**: 126 (Aug.) 1921.

SOME PRINCIPLES OF ARTHROPLASTIC OPERATIONS *

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I offer an outline of some principles of arthroplastic operations not only in the hope of bringing out profitable discussion, but also with the hope of emphasizing a few points in the after-treatment which, from experience in the reconstruction surgery of war, seem important, though not generally accepted.

In a short paper it is not possible or even necessary to discuss the various difficulties encountered in the different joints. At the outset it should be stated that these principles may or may not apply to arthroplasties of the knee. I believe they do, but I have had no experience, not having ever attempted to mobilize a bony ankylosis between the tibia and the femur.

INDICATIONS AND CONTRAINDICATIONS FOR ARTHROPLASTY

The choice and selection of cases for operation will always be of paramount importance, because poor judgment here will vitiate the final result, no matter how clever the operative technic.

1. It should not be attempted in a tuberculous joint healed or unhealed. There seems to be almost no limit to the time when tuberculous foci can remain dormant and be lighted up in the presence of an operation.

2. In infectious cases, operations should not be performed within from six months to a year after all inflammatory signs have subsided. Hot applications or baking with deep massage for a few weeks may give good indication of remaining infection, as shown by tenderness or pain. In after-war infections or in any case in which the history was that of a fulminating infection, a delay of even two to three years is wise—the longer the better.

3. Firm ankylosis of the knee in good position with strong, painless use of the leg should not be disturbed on arthroplasty except at the hands of a real master. There remains yet a lot of work to be done on these knee arthroplasties in the way of joint stabilization.

4. Firm ankylosis of the wrist joint in the functioning position of dorsiflexion and having good rotation should not be changed for arthroplasty. These operations are not very satisfactory because they nearly all result in deficient dorsiflexion of the wrist, and lateral deviations of the wrist occur. Whatever mobility results is not in the most useful arc, but usually is seen in flexion rather than dorsiflexion, thus resulting in diminished power in the grasp of the hand.

5. The social position of a patient must be considered in deciding on arthroplasty. The standards are quite different for an office worker as against a man

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performing hard, physical labor. Patients should realize that restoration of joint mobility is always accompanied by some loss of joint power.

6. Arthroplasty should never be attempted unless the patient has time to devote to the proper postoperative care. Neglect of this will cause many failures and should be considered carefully in advance instead of regretting it afterward.

7. The very young, the very old and people of such deficient mentality or courage as to make cooperation impossible are not proper subjects for such operations.

8. Arthroplasty *is* indicated when, in the absence of any contraindications, the mobilization of an ankylosed joint will decrease the disability and daily annoyance due to it and when the loss of slight power is not important.

9. By whom should arthroplasty be done? Since arthroplasty is not an emergency operation, I feel that it should be done only by that special surgeon who has not only the best hospital conditions and asepsis at his command, but also the training and the knowledge of joint function and the sound principles underlying its restoration. It should be the surgeon who has the patience and enthusiasm to carry the case through to the close, and not the man who operates and then merely shows an occasional polite interest in the work of a masseuse.

PRINCIPLES OF OPERATIVE TECHNIC

1. Extremely gentle handling of soft parts is important, taking care to follow intramuscular routes in order to minimize trauma and hence postoperative swelling.

2. One should take care to preserve the capsule if at all possible to aid future stability of the joint. In certain cases this cannot be done.

3. Gentle handling of the periosteum is important in order to avoid leaving periosteal shreds which may later cause trouble by regenerating bone. The practice of "cutting back" periosteum away from the raw bone end is a useful procedure to safeguard against reforming callus. This has been amply proved in war amputations.

4. Maintaining the general outline of the normal bone ends is important. For instance, a small V shaped notch in the lower end of the humerus prevents impingement of the lower end of the ulna. It gives far greater mobility and stability of the joint.

6. There are special means for preventing outgrowth of callus which we have found of distinct value. Microscopic examination of a fractured bone end show periosteal, cortical and medullary or better endosteal callus thrown out. For the former, "cutting back" of the periosteum seems sufficient. For the cortical and medullary portion of the bone ends we have used hammering with a diminutive hammer. This method was suggested long ago by Sir Robert Jones, but seems to have been overlooked. By this means, bleeding can almost be stopped altogether. Later roentgenograms disclose the end of the bone capped by an area of increased density, indicating the formation of bone scar. In our late cases we have seen no callus or exostoses thrown out. In our experience this method seems vastly preferable to the use of a bone file or rasp.

7. As you know, much has been written on the subject of interposing materials, and there is a wide variance of opinion regarding the advantages of the various artificially prepared membranes, such as Baer's chromicized pig bladder, and Cargile membrane; but perhaps fresh grafts of fat and fascia are used by the greatest number of surgeons. They have been used for the purpose of preventing the two bony surfaces from coming together and reankylosing. From my own experience I am convinced that there is very little difference as to what interposing material is used or even if none be employed, provided the bony surfaces are kept well apart in the postoperative period by steady fixed traction. This I will discuss later. Certain joints, however, like the temporomaxillary, do not lend themselves to traction, so that the use of Baer's membrane or fascia may be advisable. Certainly the excellent results of Dr. Baer's arthroplasties on the jaw joint are more than worthy of imitation. It is noteworthy that, in his series, when the membrane was extruded the result was quite as good as when it remained in position. This lends support to my contention that it is the length of the interposing fibrous "hinge" between the bone ends that determines the subsequent joint mobility. It seems to me that the reaction excited by the membrane in the wound stimulates the production of fibrous tissue or scar in the interval between the bones. Microscopic studies of this tissue give ample proof that osteoblastic cells cannot push their way into this dense tissue which prevents impingment. This fibrous hinge is seen to be microscopically identical with the picture of nonunion of long bones. Later, bursae may develop with a lining membrane similar to joint synovia. The same microscopic picture is also seen in a properly done joint excision in which mobility of the joint is the object even without interposing membranes or fascias, provided the bone ends are not allowed to come into contact and the fibrous tissue invasion is allowed to occur from without. It has been said that the best arthroplasty is a good excision; and this, in my experience, has been found true.

8. It is generally conceded that a certain amount of bone aside from exostoses should be removed in all arthroplastic operations. This is necessary because with stiff joints there is always shortening of the soft parts (muscles, tendons and capsule) about the joint. Failure to remove bone to shorten the skeleton of the part will result in limited painful movement. The amount to be removed in all joints is variable according to the situation and local conditions. In great toe joint operations, for instance, the removal of one-half inch of bone should be sufficient. It is better removed from the proximal end of the phalanx than from the weight-bearing surface of the metatarsal head. And yet when one roentgenographs disappointed patients who have had a poor interpretation of the Mayo operation done, it will be found that an inch and a half of the lower end of the metatarsal, including the head, may have been removed. This has been done in the hope of avoiding the bugbear of a rigid toe. The usual result is a flail great toe, which is almost worthless for giving proper thrust to the foot in walking. The removal of too small an amount of bone may result in a substitution of hallux rigidus. Also in elbow joint operations the olecranon and the coronoid process are the most frequent offenders and should be freely cut away. The removal of bone may

be quite sufficient in amount at the time of operation, yet a return of stiffness follows. This is usually due to a failure of after-treatment.

PRINCIPLES OF AFTER-TREATMENT

In cases referred to above in which there is a gradual loss of mobility in both flexion and extension, the roentgen ray will disclose that there has been a loss of the joint spacing or interval obtained at the operation. Muscular contraction of the flexor and extensor tendons has brought the bone ends nearer and nearer together.

To avoid this I find that steady fixed traction is most effective. It should be applied at the time of operation or immediately thereafter. In the large joints of the arm or leg, the Thomas arm or leg splint is very effective. The joint spacing can be easily maintained on the Thomas splint but with, of course, more difficulty in the hip. It can be made efficient, however, provided secondary pull be taken off the end of the splint while the foot of the bed is raised to use the body weight as a counterpoise.

In the small joints of the foot or hand, combination splints of plaster of Paris and wire are more easily adapted. Too much emphasis can hardly be put on the statement that the traction must be fixed and constant. I feel that ordinary Buck's extension can never be trusted to maintain separation of bone surfaces in a hip, for instance. In this connection it may be well to suggest a subcutaneous section of the hip adductors high up, so as to prevent the troublesome adduction deformity so often seen. The application of traction as the most important single postoperative measure has something else to recommend it in that it prevents muscle spasm and so reduces postoperative pain to the absolute minimum.

When truly efficient action has been employed, it is not necessary to commence movement of the joint before ten days when the wound is soundly healed. It will be found unnecessary to provoke great pain and swelling in the joint by movements to and fro. The single movement of the joint into as much flexion as possible and the reapplication of traction in extension is sufficient. It will be found to be easier on the following day, and so on. Physiotherapy in the form of gentle massage I employ with the removal of the skin sutures. After the removal of the traction, gentle movement of the joint should be carried out under warm water.

It should be stated frankly that to use traction efficiently requires constant supervision from the surgeon or trained assistant, but I am fully convinced that the results will more than justify the effort expended.

ABSTRACT OF DISCUSSION

DR. W. RUSSELL MACAUSLAND, Boston: I do not believe that an old, long-healed tuberculosis is a absolute contraindication for the operation of arthroplasty. Naturally, one avoids operating in any but selected cases. The lesion must be long-healed and have shown no signs of an active process for many years. The danger of lighting up the process is, of course, lessened by increasing the care with which the operation is done. Perfect hemostasis, slight injury to tissues and good preservation of capsule and lateral ligaments is essential. In my experience, passive motion should be limited by pain, and it will be found that motion may be "coaxed" better than forced. I do not agree with Dr. Baldwin in the relation between excision and arthroplasty. I believe he stated that a good excision was as satisfactory as a good arthroplasty. The best excision means a wabbly joint, and in any joint except the shoulder this means poor function unless supported externally by a brace. A good arthroplasty means a joint approaching normal in its motion and stability. In the elbow joint the approach to normal is surprisingly good; in the knee it is far less good—about 80 and 20 per cent., respectively.

DR. WILLIS C. CAMPBELL, Memphis: Experimental work in this field is absolutely worthless, as the conditions we find in these patients are so different from those seen in the normal joints of animals. There are certain limitations, as Dr. Baldwin brought out, but one in particular struck me from a pathologic standpoint, and that is the type of infection encountered, especially tuberculosis. I do not believe a tuberculous joint should be subjected to arthroplasty or any form of mobilization operation. Second is the type that follows extensive osteomyelitis in which there has been increased thickening in the bone. That type of bone bears the same relation to normal bone as low grade scar tissue does to soft tissues, and is not suitable for the formation of new joints. I have done arthroplasties on this type, all of which were failures. We were able to restore a better position of the limb but no movement. The only type suitable for this operation is the one in which there has been acute infection, such as staphylococcus, pneumococcus or gonococcus, and the bone is affected only a short distance from the joint surface. I have employed various measures, as free fascia, pedunculated fascia and Baer's membrane in various joints—none of which are successful in a large proportion of cases. Elbow, jaws and hips probably are the most satisfactory results on the whole. Satisfactory motion has been obtained in five knees—one, normal motion, one about 80 degrees. In no case have I seen instability.

DR. EDWIN W. RYERSON, Chicago: Dr. Baldwin has stated very well the various indications for arthroplasty, and with most of his conclusions I agree. There is one point, however, in which I disagree very much. He advocates little dissection, and nonremoval of capsular and periarticular fibrous tissue. This is contrary to most of the authorities. In most cases there is periarticular infiltration, and the surrounding tissue is found to be a very dense membrane which should be removed during the operation, as also should the fibrous remains of the capsule and synovia. The other point in which I differ is in the use of interposing membrane. I believe this is not only desirable but should always be used, and for this reason: In one case in a series of thirty elbow joints, we were nearly through the operation when it was discovered that no membrane was present in the hospital. We had been using Baer's chromicized pig's bladder. We closed the wound, and the after-treatment was the same as in the other cases. This patient made free use of the elbow, but the elbow became ankylosed by bony union. Six months afterward we reoperated, and he now has satisfactory range of motion because we put in a piece of Baer's membrane.

DR. WALTER G. STERN, Cleveland: Concerning the subject of mobilizing the ankylosed maxillary joint, it has been held that wide excision alone without the interposition of foreign membranes or fascia and early use can be relied on to give excellent results, and it is not necessary to do a typical arthroplasty between the resected maxilla and its former joint.

DR. HENRY KELLER, New York: This subject of arthroplastic operation is of such great importance that I believe every one with experience which may differ from that of the reader of the paper should consider it worth while to bring it up. One thing I did not hear emphasized was that one has to be careful in deciding on arthroplasty in cases of ostearthritis with marked osteophytic outgrowths. Those who have had the unpleasant experience with those cases know that when there is excessive tendency to exostosis there will be the same trouble repeated with considerable tenderness shortly after operation. As far as tuberculosis is concerned I believe it is a good policy to wait a number of years after the subsidence of the disease before arthroplasty should be undertaken. There is, however, this difference

between the joints of the upper and lower extremities that, whereas, in the lower extremity proper stability is a great asset, interference with stability through arthroplasty in joints such as the knee or hip, ankylosis, following tuberculous infection, is to be discouraged, as one can never be sure of the complete disappearance of the foci of infection; hence there is always the fear of rekindling the dormant disease. On the other hand, in ankylosis of the joints of the upper extremity, i. e., the elbow, when left in a malposition which tends to interfere with the necessary daily functions of the forearm, I would not hesitate to enter the joint after the lapse of four or five years and do an arthroplasty; for even if the operation does not meet with entire success we shall at least, as a last resort, be in a position to place the forearm in a corrected attitude and restore some of the lost function.

DR. WALTER I. BALDWIN, San Francisco: As to doing arthroplasties on tuberculous joints, it seems to me that the consequences are so serious that one should be most wary. The fact that a case has been done without untoward result is hardly convincing. Dr. Ryerson mentioned the excision of all infectious material, and with that one must agree, but the very fact that his case resulted in ankylosis where he did not use interposing membrane is quite outside the point, because he does not speak of having used the one measure which makes this possible, i. e., steady, fixed traction of the joint.

THE SEROTHERAPY OF BACILLARY DYSENTERY IN CHILDREN *

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AND
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Because of the enthusiastic reports in favor of specific serum therapy in both Flexner [1] and Shiga [2] varieties of bacillary dysentery in adults, we have during the last two years administered antidysenteric serum to twenty children in age from 6 months to 4½ years suffering from dysentery.

Polyvalent (Shiga and Flexner) antidysenteric serum [3] in doses of from 20 to 50 c.c. was injected intramuscularly or subcutaneously in all of these patients. As is shown in Table 1, in some instances as many as six doses at intervals of from twenty-four to forty-eight hours were employed. In addition, in two cases of Shiga infection, we injected the Rockefeller Institute Shiga dysentery antitoxin in doses of 20 c.c. The polyvalent serum agglutinated all of the strains of dysentery bacilli we isolated. Its Shiga antitoxin content was not titrated.

During 1919 and 1920 in Baltimore, Birmingham, Ala.,[4] and Boston,[5] we studied seventy-three cases of bacillary dysentery in children from 3 months to 11 years of age, in which the clinical diagnosis was confirmed by the recovery of dysentery bacilli from the stools or by necropsy. The clinical and bacteriologic data of our series in 1919 have been previously reported.[6] The findings in the 1920 cases were similar except that the infections were much more severe and that there was a higher incidence of terminal bronchopneumonia. All of our cases were from homes scattered throughout these cities and were apparently not due to any particular epidemic.

TABLE 1.—NUMBER OF DOSES OF SERUM ADMINISTERED

Number of Doses of Serum	Number of Patients	Number Died	Mortality, %
1	8	2	25
2	2	2	100
3	5	3	60
4	3	1	33
6	2	2	100
—	—	—	—
Total	20	10	50

We have excluded from this series fifty-two additional cases of bacillary dysentery in children. In forty-seven of these, the clinical diagnosis was not confirmed by bacteriologic or pathologic methods. In some of these, stool cultures were negative, while in others the press of work prevented the collection and study of satisfactory specimens. In the remaining five instances, all of which were fatal, although the presence of bacillary dysentery was confirmed bacteriologically, yet other coincident conditions, such as pneumonia, marasmus, osteomyelitis, tuberculosis and pertussis, were the predominating features and were primarily responsible for death. It may be stated that the presence of bacillary dysentery as a complication of other diseases greatly adds to the gravity of prognosis.

To judge the usefulness of any therapeutic measure there are at least three cardinal criteria, i. e., the untoward results or dangers, the effect on mortality, and the effect on the length and course of the disease.

The subcutaneous or intramuscular injection of antidysenteric serum in daily doses of from 20 to 50 c.c. is apparently harmless. (As the intravenous administration of antimeningococcus serum has been shown to be attended by severe reaction in children,[7] we have not used this route.) There were no symptoms of anaphylaxis. Occasionally a slight increase in fever followed the injection of serum. Its intensity and duration bore no relation to the amount of serum administered. It did not occur regularly after each injection in any individual case. In no instance did a chill accompany the rise in temperature. This occasional febrile response had no apparent effect on the course of the disease. Two patients refused the next

* From the Department of Pediatrics, Johns Hopkins University, and the Harriet Lane Home, Johns Hopkins Hospital.

1. Ruffer, M. A., and Willmore, J. G.: The Serum Treatment of Dysentery, with Notes on the Bacteriological Diagnosis of Dysentery, Brit. M. J. **2**: 1519, 1910. Archibald, Hadfield, Logan and Campbell: Laboratory Report (Gallipoli), J. R. A. M. C. **26**: 695, 1916. Klein, B. G.: Serum Treatment of Bacillary Dysentery; Dysentery; Dysentery Arthritis, Lancet **2**: 775 (Nov. 1) 1919; J. R. A. M. C. **33**: 343, 1919. Cowan, J. N., and Miller, H.: Dysentery: "A Clinical Study," J. R. A. M. C. **31**: 277 (Oct.) 1918. Lunn, W. E. C.: Toxemic Arthritis as a Complication of Acute Dysentery, ibid. **22**: 310, 1914. Görner: Die Therapie der Bazillen-ruhr, München. med. Wchnschr. **66**: 427, 1919. Thomson, D., and Mackie, T. J.: J. R. A. M. C. **28**: 403, 1917. Jacob, L.: Ueber die Behandlung der Ruhr mit polyvalentem Serum, München. med. Wchnschr. **65**: 640-642, 1918. Fisher, J. B.: Treatment of Acute Bacillary Dysentery, Brit. M. J. **1**: 43 (Jan. 13) 1917. Finlayson, G. A.: Treatment of Acute Bacillary Dysentery, ibid., p. 47. Lantin, T.: Various Methods of Serum Application in Bacillary Dysentery, Philippine J. Sc. (Sec. B) **13**: 261 (Sept.) 1918. Dudgeon, L. S. et al.: Studies of Bacillary Dysentery Occurring in the British Forces in Macedonia, Med. Res. Com., Special Rep. Ser., No. 40, London, 1919. Flexner, Simon: Serum Treatment of Bacillary Dysentery (Biologic Therapy Series), J. A. M. A. **76**: 108 (Jan. 8) 1921.

2. Shiga, K.: Bacillary Dysentery, in Osler and McCrae: Modern Medicine, Ed. 2, Philadelphia **1**: 766-782, 1913. Rosenthal, L.: Centralbl. f. Bakteriol., I Ref. **34**: 503, 1904; Zur Aetiologie der Dysenterie (Moscow), Deutsch. Med. Wchnschr. **29**: 97, 1903; ibid. **30**: 235, 1904. Nelli, Luigi: Serum Therapy in Dysentery, Gaz. d. Osp. **40**: 220 (March 30) 1919.

3. In 1919, this serum was very kindly sent to us from the Rockefeller Institute by Dr. Simon Flexner and Dr. Peter Olitsky, and in 1920 we were indebted to the Mulford Biological Laboratories and to Drs. Huntoon and Devereux for our supply.

4. The work in Birmingham, Ala., was performed by Dr. Harold L. Higgins and one of us at the request of Dr. John Howland, and with a grant of money from the Therapeutic Research Committee of the Council on Pharmacy and Chemistry of the American Medical Association.

5. Through the kindness of Dr. Henry I. Bowditch, one of us was able to study several cases of bacillary dysentery in children on the Boston Floating Hospital during the summer of 1920. We wish to express our thanks to Drs. Bowditch, Carson, Jones, Peck and Smith for their assistance in this work.

6. Davison, W. C.: Bacillary Dysentery in Children, Bull. Johns Hopkins Hosp. **21**: 225-234 (July) 1920; Divisions of the So-Called Flexner Group of Dysentery Bacilli, J. Exper. Med. **32**: 651-663 (Dec.) 1920.

7. Blackfan, K. D.: The Use of of Antimeningococcus Serum in the Treatment of Epidemic Meningitis (Biologic Therapy Series), J. A. M. A. **76**: 36 (Jan. 1) 1921.

feeding after an injection of serum, but in none of the others was there any decrease or increase of appetite as a result of serum. In no instance was vomiting lessened or incited. As might be expected after such comparatively large doses, some of the patients, especially young infants, suffered considerable pain at the site of injection. Serum sickness, consisting of a rise in temperature and urticaria, was noted in several patients but bore no relation to the ultimate outcome of the case or to the severity of any of the other symptoms.

In Table 2, we have divided as accurately as possible the serum treated and untreated patients into severe, moderate and mild groups on the basis of their clinical appearance, degree of fever and number and character of stools. The mortality in the treated and in the untreated severe cases in which the gravest prognosis was made at the start was practically identical. Among the cases we have classified as moderate, the mortality was not favorably affected by serotherapy, for a higher percentage of the treated patients died. We do not

TABLE 2.—MORTALITY OF SERUM TREATED AND UNTREATED PATIENTS

Degree of Severity	Treated			Untreated		
	Number of Treated Patients	Number of Treated Patients Died	Mortality, Per Cent.	Number of Untreated Patients	Number of Untreated Patients Died	Mortality, Per Cent.
Severe	9	7	78	13	10	77
Moderate	8	3	37	16	5	31
Total of severe and moderate cases	17	10	59	29	15	52
Mild	3	0	0	24	0	0
Total, including mild cases	20	10	50	53	15	28

believe, however, that serum actually increased the mortality, for it is probable that the treated group contained more severe infections. If both the severe and moderate cases are considered together, the higher mortality of the treated series indicates that serum was not beneficial. As there were no deaths in the mild treated and the untreated cases, no conclusions may be drawn from this group or from the total mortality.

In Table 1 we have compared the relation of the number of doses administered to the mortality. At first glance it would appear that, as the mortality among the patients receiving but one treatment was 25 per cent., while in the patients receiving six doses it was 100 per cent., continued serotherapy is harmful.

TABLE 3.—DAY OF DISEASE ON WHICH FIRST SERUM INJECTION WAS GIVEN

Day After Onset on Which First Serum Injection Was Made	Number of Patients	Number Died	Mortality, Per Cent.
From 2d to 3d, inclusive	6	3	50
From 4th to 6th, inclusive	5	3	60
From 7th to 10th, inclusive	4	3	75
From 12th to 18th, inclusive	5	1	20
Total	20	10	50

This conclusion is not valid, however, because many of the patients receiving but one treatment had moderate or mild infections, while those receiving six doses had severe infections. This table does illustrate, however, that the failure of serum was not due to lack of intensity of treatment and that, in spite of several doses, the mortality was not reduced.

It may perhaps be said, as is indicated in Table 3, that serum administered during the first few days of the disease is somewhat more beneficial than that injected during the second week. Fifty per cent. of the patients treated before the third day died, while 75 per cent. of those treated between the eighth and tenth days succumbed. The low mortality among the patients treated after the twelfth day of the disease may be explained by Table 4, in which it may be seen that

TABLE 4.—DURATION OF DISEASE IN FATAL TREATED AND UNTREATED CASES

Number of Days After Onset on Which Death Occurred	Number of Fatal Treated Cases	Number of Fatal Untreated Cases
From 3d to 7th, inclusive	3	3
From 8th to 12th, inclusive	3	5
From 15th to 38th, inclusive	4	4
	Fatal Treated Cases	Fatal Untreated Cases
Percentage of total deaths occurring within the first 12 days	60%	66%
Mean duration excluding extremes	10.5 days	10 days
Average duration	12.1 days	13.2 days

about two thirds of the deaths in bacillary dysentery, whether the patients have received serum or not, occur within the first twelve days, and that patients surviving that period have a much better chance of recovery.

It is clear from Table 4 that serum has no effect in prolonging life in fatal cases, for the mean duration (excluding extremes) for both treated and untreated cases was ten days. The average duration of the disease in fatal treated cases was 12.1 days, and in fatal untreated cases was 13.2 days.

Serotherapy had apparently no effect on the number and character of the stools. The duration of anorexia, prostration and diarrhea did not appear to be shortened by serum treatment. The effect of serum on the rapidity of disappearance of dysentery bacilli from the stools was not studied.

We did not have a sufficient number of instances of Shiga infection from which to draw any definite conclusions in regard to the comparison of the value of serotherapy in Flexner and Shiga infections. In Table 5 we have recorded the mortality in the two types.

TABLE 5.—RELATION OF MORTALITY TO TYPE OF INFECTING DYSENTERY BACILLUS

Type of Infecting Dysentery Bacillus	Number of Treated Patients	Mortality Among Treated Patients, Per Cent.	Number of Untreated Patients	Mortality Among Untreated Patients, Per Cent.
B. dysenteriae (Flexner)	17	47	48	27
B. dysenteriae (Shiga)	3	66	4	25

One of the two patients with Shiga infection who received the Rockefeller Institute Shiga antitoxin, as well as polyvalent serum, died. This child received two doses of 20 c.c. of polyvalent antidysenteric serum and four injections of 25 c.c. of Shiga antitoxin at twenty-four hour intervals. In the other patient, serotherapy was apparently beneficial from a clinical standpoint. She received three doses of 20 c.c. of polyvalent antidysenteric serum at twenty-four hour intervals, and one dose of 25 c.c. of Shiga antitoxin on the fourth day. Both of these Shiga infections treated with Shiga antitoxin were severe.

CONCLUSIONS

As far as can be judged from this limited series of cases of bacillary dysentery in children in whom subcutaneous and intramuscular injections of from 20 to 50 c.c. of antidysenteric serum were used, serotherapy did not influence the mortality or the course of the disease. In the very ill, especially in young infants, the pain at the site of injection is a contraindication to the use of intramuscular injections.

CLINICAL STUDIES OF DRUGS OF THE "DIGITALIS SERIES"

III. APOCYNUM AND CONVALLARIA *

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The treatment of heart disease by drugs other than digitalis is apparently a fairly widespread custom. The drugs commonly employed are those grouped by textbooks [1] as members of "the digitalis series." They include strophanthus, squill, apocynum, convallaria, adonis, oleander, hellebore and euonymus.[2] It has been our attempt, in the investigation here reported, to determine what foundation, if any, there may be for the use of apocynum and convallaria in the treatment of heart disease, either alone or in conjunction with one of the preparations of digitalis. The study is a continuation of that carried out on the tincture of squill, reported last year.[3]

APOCYNUM

Apocynum cannabinum, or Canadian hemp, is a plant which has been used medicinally in this country for about a century, having been introduced to the profession by Knapp [4] in 1826. He reported nineteen cases in which the extract of the plant had been given to provoke vomiting, diarrhea or sweating, with apparently a high degree of success. Knapp first recorded its action on the pulse; having taken a dose of 30 grains of the extract, he noted that his pulse fell from 70 to 50 in one hour, and to 45 in two hours. From 1830 to 1900, one may find a considerable number of references in medical literature to the use of this drug, most of them being favorable reports of its diuretic or emetic action.[5] Acceptable scientific work on the subject of its action, however, is strikingly absent, although Murray,[6] in 1889, reported observations showing that its diuretic action was limited to cases of edema due to heart disease, being absent in cases of nephritic edema. In 1904, Wood [7] reported a study conducted on animals which showed the drug to be possessed of a stimulating action on the cardio-inhibitory center and a constrictor action on the blood vessels. In 1910, Dale and Laidlaw [8] isolated a crystalline active principle, cymarin, with which they conducted careful experiments on warm-blooded animals. They concluded that "cymarin has an action which is like that of digitalis in all respects, but is not cumulative." Beco and Dossin [9] have recently reported further studies of cymarin, in which dogs were used. Other reports which we have been able to find seem to possess chiefly historical interest.[10]

METHOD OF STUDY

As one purpose of our investigation was to compare the action of the selected drugs with that of digitalis in the same cases, we chose only the cases in which digitalis acts best, namely, cases of heart disease complicated by auricular fibrillation. We have thus avoided the possibility of controversy regarding the action of digitalis-like drugs in hearts with normal rhythm. Among cases of auricular fibrillation, however, no selection was made; cases were taken as they came to the hospital, without reference to preceding history or underlying cause. In other words, in any case in which digitalis would ordinarily have been administered, either apocynum or convallaria was given first. Patients were allowed to remain in bed without medication for several days, or as long as there was definite clinical improvement or slowing of the heart rate. They then received apocynum or convallaria for a sufficiently long period to demonstrate the action or lack of action of the drug. It was then discontinued. After allowing a lapse of time sufficient for the excretion of the tested drug, each patient was given digitalis. Results which admit of fair comparison were thus obtained. During the time of administration of the drug, and until discharge, daily observations were made by the same observer at the same hour, regarding the rate of the heart (apex), pulse deficit, edema (subcutaneous, hydrothorax, ascites, etc.), diuresis, cyanosis, cough, hemoptysis, precordial pain, palpitation, dyspnea, orthopnea, anorexia, headache, and any particular sign or symptom which individual patients might display. Electrocardiograms were taken daily during the administration of the tested drug, less frequently during the "waiting period," between the administration of that drug and digitalis, and always before, during and after digitalis administration. All patients had also daily determinations of the vital capacity of the lungs. (Exceptions are mentioned below.) As digitalis has a characteristic effect on the electrocardiogram, in which it causes inversion of the T deflection in Lead II, and definite slowing of the ventricular rate in cases of auricular fibrillation, it was thought that we might obtain graphic evidence of the cardiac action of these drugs, if they were possessed of any.

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* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints.

* Read before the Section on Pharmacology and Therapeutics at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

* The previous papers of these studies are: White, P. D., and Satler, R. R.: The Effect of Digitalis on the Normal Human Electrocardiogram, with Especial Reference to A-V Conduction, J. Exper. M. **23**: 613 (May) 1916. White, P. D.; Balboni, G. M., and Viko, L. E.: Clinical Observations on the Digitalis-Like Action of Squill, J. A. M. A. **75**: 971 (Oct. 9) 1920.

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3. White, P. D.; Balboni, G. M., and Viko, L. E.: Clinical Observations on the Digitalis-Like Action of Squill, J. A. M. A. **75**: 971 (Oct. 9) 1920.

4. Knapp, M. L.: Dissertation on the Properties of Apocynum Cannabinum, Am. M. Rev. & Jour. **3**: 194, 1826.

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The preparation of the drug used in this study was the fluidextract. Three different specimens were obtained from three pharmaceutic houses, and all of them were tested on frogs.[11] This was done under the direction of Dr. Worth Hale, of the department of pharmacology of the Harvard University School of Medicine. Tested in this manner, the drug was found to have the frog-unit strength indicated in Table 1.

TABLE 1.—FROG-UNIT STRENGTH OF APOCYNUM *

Parke-Davis	.....fluidextract, 0.000225 c.c. per gram of body weight
Eli Lilly	.....fluidextract, 0.0002 c.c. per gram of body weight
Sharpe & Dohme	....fluidextract, 0.0002 c.c. per gram of body weight

* Figures refer to the amount of drug required to cause systolic arrest of the heart in one hour.

It is to be noted that the figures in Table 1 are in terms of the fluidextract; the strength of the tincture will be represented by figures ten times as large. It is therefore obvious that the action of tincture of apocynum on the frog's heart is almost precisely three times as powerful as that of the official tincture of digitalis.

11. While this article was in course of pubication, Dr. R. A. Hatcher kindly determined the cat unit strength of the specimens of apocynum and convallaria which were used in our studies. The following quotation from Dr. Hatcher's report is of considerable interest: "The apocynum is about thirty times as active as an average good specimen of digitalis tincture; that is, 0.035 c.c. of the fluidextract is equal to a cat unit. This agrees very closely with the test on frogs (the fluidextract being ten times the strength of the tincture). The fluidextract of convallaria is about forty times as active as a good specimen of tincture of digitalis, according to my test, 0.25 c.c. being equal to one cat unit. This would indicate that it is about 30 per cent. more active by the cat test than by the frog test. Each of two cats received oral doses of 0.7 c.c. of the fluidextract of apocynum per kilogram of weight through a stomach tube (20 cat units per kilogram). They vomited after twenty-seven and thirty-four minutes, respectively; one of them vomited many times. Both showed either diarrhea or intestinal evacuation."

DOSAGE

The dose recommended for the fluidextract is 1 c.c. In our first few cases, we began with this dose, but found that it caused intense nausea and prolonged vomiting in every case; with a single exception, vomiting occurred within thirty minutes of such a dose. A routine dose of 0.5 c.c. gave almost the same effects, so it became our practice to administer the drug in doses of 0.1 c.c. for each 30 pounds (13.6 kg.) of body weight, such dose being given in gelatin capsules three times a day. In cases in which quick action seemed desirable, we began with one dose, slightly larger than would be indicated on the basis of body weight, and then continued with the calculated amount three times a day.

RESULTS

We have studied the action of apocynum in the manner indicated in twelve cases of heart disease with auricular fibrillation, and one case of heart disease with auricular flutter. Three of these patients were in the House of the Good Samaritan, and they did not have daily electrocardiograms or vital capacity determinations. The twelve cases with fibrillation included three cases with exophthalmic goiter, in two of which the fibrillation seemed to be associated with the thyroid condition; in the third, there was a definite history of repeated rheumatic attacks preceding the development of the hyperthyroidism. These three cases form a special group as regards the response to treatment with apocynum.

TABLE 2.—EFFECT

Case	Diagnosis*	Total Dose, C.c.	Number of Days	Apex Rate		Pulse Deficit		Cyanosis		Edema		Weight, Lbs.		Dyspnea		Palpitation		General Subjective Sensations	
				Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
1	Rheumatic heart	6	5	95	62	10	2	0	0	Slt.	0	110	107	Mod.	0	Mod.	0	Poor	Well
2	Rheumatic heart	15.3	13	102	64	19	4	0	0	0	0	135	139	Mod.	Mod.	Mod.	Mod.	Poor	Better
3	Rheumatic heart	11.7	13	95	58	20	8	Slt.	0	Mkd.	Mod.	...	...	Mod.	Slt.	Mkd.	Slt.	Poor	Better
4	Rheumatic heart	9	19	140	76	70	12	Mkd.	Mod.	Mkd.	Mkd.	91	92	Mkd.	Mod.	Mkd.	Mkd.	Poor	Poor
5	Rheumatic heart	4	3	118	66	28	4	0	0	Slt.	0	104	102	Mod.	Mod.	Mod.	Mod.	Poor	Poor
6	Rheumatic heart	4.5	3	140	78	70	0	0	0	Slt.	Slt.	...	...	Mod.	Mod.	Occ.	0	Poor	Poor
7	Cardiosclerosis..	11.5	10	110	62	60	2	0	0	Slt.	0	140	140	Slt.	Slt.	Occ.	0	Poor	Better
8	Cardiosclerosis..	8.2	7	140	66	48	2	0	0	Mkd.	0	128	117	Mkd.	0	0	0	Poor	Better
9	Cardiosclerosis..	11.5	5	120	60	12	2	0	0	0	0	141	142	0	0	0	0	Fair	Better
10	Thyroid heart...	15.5	14	125	120	5	5	0	0	0	0	...	...	0	0	Slt.	Slt.	Well	Well
11	Thyroid heart...	4.8	4	190	150	100	44	0	0	0	0	94	92	0	0	Slt.	Slt.	Poor	Poor
12‡	Thyroid heart...	4.7	4	140	100	14	..	0	0	0	0	97	89	0	0	Slt.	0	Poor	Poor

* All were cases of auricular fibrillation.
† Numerators represent systolic pressure; denominators, diastolic.
‡ Case 12 demands a word of explanation. In this patient there was a resumption of normal rhythm on the fourth day after starting apocynum, and it is possible that apocynum may have been instrumental in causing the change. The auricles later fibrillated, but there was no opportunity for repeating the experiment. The loss of 8 pounds weight in four days is probably explained by the severe diarrhea which developed (twelve watery movements a day) and the metabolism of +44 per cent.

TABLE 4.—EFFECT

Case	Diagnosis*	Total Dose, C.c.	Number of Days	Apex Rate		Pulse Deficit		Cyanosis		Edema		Weight, Lbs.		Dyspnea		Palpitation		General Subjective Sensations	
				Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After	Before	After
1	Rheumatic heart	109	19	142	80	24	0	0	0	0	0	110	109	Slt.	0	Slt.	0	Poor	Well
2	Rheumatic heart	14	6	118	80	28	0	Slt.	Slt.	..	..	112	110	Mkd.	Slt.	Mkd.	Slt.	Poor	Sl. imp.
3	Rheumatic heart	106	6	88	84	4	10	0	0	0	0	121	119	0	0	0	0	Well	Well
4	Rheumatic heart	40	3	80	80	20	22	0	0	0	0	190	190	0	0	0	0	Well	Well
5	Rheumatic heart	50	2	80	82	10	12	0	0	0	0	98	98	Slt.	Slt.	Slt.	Slt.	Fair	Poor
6	Cardiosclerosis..	45	2	128	75	56	4	Mod.	Mod.	0	0	176	175	Mkd.	Slt.	Slt.	Slt.	Poor	Poor
7	Cardiosclerosis..	35	3	90	58	30	16	Mkd.	Mkd.	0	0	165	164	0	0	Slt.	Slt.	Fair	Fair
8	Cardiosclerosis..	75	4	132	78	52	6	Mod.	Mod.	Slt.	0	127	117	Mod.	Slt.	Slt.	Slt.	Fair	Well
9	Cardiosclerosis..	105	7	100	64	14	0	Slt.	Slt.	Mkd.	0	175	161	Mkd.	0	Slt.	0	Poor	Well
10	Thyroid heart...	10	5	110	135	18	15	0	0	0	0	...	...	Slt.	Slt.	Slt.	Slt.	Fair	Poor
11	Thyroid heart...	60	9	140	110	10	6	0	0	0	0	...	...	0	0	Slt.	Slt.	Fair	Fair
12	Thyroid heart...	55	4	96	92	10	10	0	0	0	0	117	112	Slt.	Slt.	Slt.	Slt.	Fair	Fair

* Auricular fibrillation in all cases.
† Numerators represent systolic pressure; denominators, diastolic.
Summary: Total dose, from 9.5 to 109 c.c. Number of days, from 2 to 19. Apex rate, above 100 in 7, above 80 in all; decreased more than 30 beats in 7, no decrease in 5. Pulse deficit, from 4 to 56 beats before; decreased six or more beats in 6. Dyspnea, present in 8; decreased in 5. Cyanosis, present in 6; changed in none. Palpitation, present in 10; diminished in 4. Edema, present in 2; decreased in 2. Weight,

Production of Heart Block; Clinical Improvement.—In the nine cases of fibrillation not of thyroid type, the action of apocynum was marked by a quick reduction in the apex rate of the heart, a diminution in the pulse deficit, diuresis in all cases in which there was edema, and simultaneous improvement in the general clinical condition. Of the three cases associated with hyperthyroidism, two responded by a slight drop in the heart rate; the third resumed normal rhythm several days after the drug was started, although auricular fibrillation again made its appearance about ten days later. In none of these three cases was there any clinical improvement whatever. In the one case of heart disease complicated by auricular flutter of apocynum are more severe than the same symptoms following overdosage with digitalis.

Duration of Action.—The action of apocynum on the heart was manifested only so long as it was given three times a day. In all cases, signs and symptoms which had disappeared under its use began to reappear

TABLE 3.—FROG-UNIT STRENGTH OF CONVALLARIA*

Parke-Davis	fluidextract, 0.00025 c.c. per gram of body weight
Eli Lilly	fluidextract, 0.00025 c.c. per gram of body weight
Sharpe & Dohme	fluidextract, 0.00025 c.c. per gram of body weight

* Figure refers to the amount of drug required to cause systolic arrest of the heart in one hour.

OF APOCYNUM

Nausea		Vomiting		Diarrhea		Vital Capacity, C.c.		Blood Pressure,† Mm. Hg			Electrocardiographic Changes	Response to Digitalis
Before	During	Before	During	Before	During	Before	After	Before	During	After		
0	0	0	0	0	0	1,614	1,922	112/ 70	112/ 70	110/ 75	Block; inversion of T	Not given
0	Mkd.	0	Mkd.	0	0	1,390	2,088	124/ 82	120/ 90	120/ 85	Block; T slightly diphasic before treatment; more so after	Excellent
0	Mkd.	0	Mkd.	0	0	1,082	1,082	160/100	158/100	160/100	Block; inversion of T	Excellent
0	Mkd.	0	Mkd.	0	0	.....	.....	120/ 72	118/ 72	110/ 76	.....	Excellent
Slt.	Mkd.	0	Mkd.	0	0	1,390	1,810	120/ 76	112/ 74	120/ 74	Block; no change in T wave	Excellent
Slt.	Mkd.	0	Mkd	0	0	1,054	1,082		Not done		Block; no change in T wave	Excellent
0	Mkd.	0	Mkd.	0	0	.....	.....	145/100	140/100	135/ 95	.....	Excellent
0	Mkd.	0	Mkd.	0	Slt.	1,194	1,950	160/110	162/115	156/110	Block; inversion of T	Excellent
0	Slt.	0	Slt.	0	0	2,500	2,948		Not done		Block; decrease in height of T	Excellent
0	Slt.	0	Slt.	0	0	.....	.....	140/ 85	142/ 80	140/ 85	.....	Fair
0	Mkd.	0	Mkd.	0	0	1,194	1,598	132/ 80	140/ 60	130/ 60	Block (slight); no change in T wave	Excellent
Slt.	Mkd.	0	Mkd.	0	Severe	.....	.....	122/ 58	128/ 60	120/ 58	Block; prolonged P-R interval; normal rhythm resumed	Fair

Summary: Total dose, from 4 to 15.5 c.c. Number of days, 3 to 19. Apex rate, above 100 in 10 cases, above 90 in all; reduced (30 or more beats) in 11. Pulse deficit, from 5 to 100 beats before; reduced (8 or more beats) in 11. Dyspnea, present in 8; reduced in 6. Cyanosis, present in 2, decreased in 2. Palpitation, present in 10; diminished in 7. Edema, present in 7 cases; reduced in 5. Subjective improvement in 6 cases. Nausea occurred in 11 cases; Vomiting occurred in 11 cases. Vital capacity, done in 8 cases; increased (more than 100 c.c.) in 6. Changes in electrocardiogram, heart block in all of the 9 cases studied; inversion of a previously flat or upright T in 3 cases; decrease in height of T in 1 case. Response to digitalis given to 11 cases; response excellent in 9, fair in 2.

OF CONVALLARIA

Nausea		Vomiting		Diarrhea		Vital Capacity, C.c.		Blood Pressure,† Mm. Hg			Electrocardiographic Changes	Response to Digitalis
Before	During	Before	During	Before	During	Before	After	Before	During	After		
0	Slt.	0	Mod.	0	Slt.	.....	.....	.....	.....	.....	.....	Excellent
0	Slt.	0	Mod.	0	0	970	1,054	170/100	170/108	170/100	Heart block; inversion of T became less	Excellent
0	0	0	0	0	0	1,866	1,754	112/ 75	110/ 70	110/ 70	Block; no change in T wave	Excellent
0	0	0	0	0	0	1,894	2,220	136/ 72	135/ 82	135/ 80	No block or change in T wave	Not given
0	Slt.	0	Mod.	0	Severe	1,446	1,754	.....	.....	.....	Slight block; inversion of T wave	Excellent
0	Slt.	0	Mod.	0	0	3,200	4,068	140/ 90	.....	138/ 88	Block; inversion of T wave	Excellent
0	0	0	0	0	0	1,838	1,474	122/ 90	124/ 90	128/ 86	Block; no changes in T wave	Not given
0	Slt.	0	Mod.	0	Slt.	2,332	2,864	120/ 92	120/ 90	122/ 90	Block; inversion of T wave (slightly diphasic in beginning)	Excellent
0	Slt.	0	0	0	Slt.	1,390	2,724	.....	.....	.....	Block; no change in T wave	Excellent
0	Slt.	0	0	0	Slt.	.....	.....	.....	.....	.....	.....	Excellent
0	Slt.	0	Mod.	0	0	.....	.....	.....	.....	.....	.....	Excellent
0	Slt.	0	0	0	Slt.	1,194	1,390	160/ 70	170/ 72	162/ 70	No block or change in T wave	Excellent

decreased more than 5 pounds in 3 (one of these was a case of hyperthyroidism with a basal metabolism of +44 per cent.). Subjective improvement occurred in 4 cases. Nausea occurred in 9 cases. Vomiting occurred in 6 cases. Diarrhea, in 6 cases. Vital capacity, done in 9 cases; increased (100 c.c. or more) in 6. Blood pressure studied in 7 cases; no changes. Changes in electrocardiogram, heart block in 6 cases; inversion of T wave in 3 cases. Response to digitalis given in 10 cases; excellent response in all.

apocynum acted in the manner which is typical of digitalis: fibrillation appeared within several hours of the first dose of the drug, which was then discontinued, and normal rhythm was resumed on the second day thereafter.[12]

Nausea and Vomiting.—In eleven of the twelve cases cited, there was intense nausea and vomiting. It was the appearance of these symptoms which necessitated the withdrawal of the drug in almost every instance. The nausea was of a particularly severe character, often not relieved at all by the vomiting, which was a constant accompaniment. It was so marked as to overshadow and obliterate the memory of the drug's good effects in every patient. It has been the impression of all of us who have watched these cases that the nausea and vomiting following the administration within forty-eight hours of its discontinuance, and in most cases there was a distinct rise in the rate of the heart within twenty-four hours after the drug was stopped.

Diuresis.—Seven of the twelve patients had edema at the time treatment was begun. Of the seven, five showed a definite decrease in the amount of edema which was demonstrable, and four of them showed a corresponding loss of weight. (The fifth patient was not weighed before treatment was started.)

Diarrhea.—This occurrred in only two cases; in one it was of moderate severity, in the other it was very severe, and continued for several days after the drug was stopped.

Blood Pressure.—Determinations were made in ten cases, usually every other day before, during and after the course of treatment. The most forceful pulsations were recorded. In no case was there a change in either

12. This patient has been seen once since her discharge from the hospital, at which time she showed auricular fibrillation.

systolic or diastolic pressure greater than 10 mm. of mercury, and in only two was the change as great as that.

Vital Capacity.—Eight patients of this series had daily vital capacity determinations. Six of them showed an increase during the period of administration of apocynum; these six patients all showed definite clinical improvement, the greatest improvement being shown in those patients whose vital capacity increased most. These results are in accord with those of Peabody and Wentworth,[13] but in none of our cases was the increase in vital capacity sufficient to be of importance in estimating the degree of clinical improvement.

Changes in Electrocardiogram.—Of the nine patients studied by means of daily electrocardiograms, three showed definite inversion of the T deflection in Lead II during treatment with apocynum; the same patients showed an upright or flat T before and after treatment. One patient showed a decrease in the height of the T deflection (from 0.25 to 0.15 millivolt) without inversion; one resumed normal rhythm; one showed at entrance a T already inverted, probably from digitalis, which became slightly less so during the administration of apocynum. The two remaining patients showed no changes except definite slowing of the ventricular rate.

Comparison with Digitalis.—All of the twelve patients received digitalis after the effect of apocynum had been recorded. (In one case, the digitalis was taken after the patient left the hospital, but the results were carefully watched.) In every case, the favorable effect due to apocynum was exceeded by that due to digitalis; the lowering of the apex rate, the diminution in the pulse deficit, the diuresis, the clinical improvement, all took place to a greater degree, in a shorter time, without discomfort to the patient, and were more prolonged.

SUMMARY

The action of fluidextract of apocynum has been studied in a series of twelve cases of heart disease with auricular fibrillation and one case of heart disease with auricular flutter. The drug was given by mouth; clinical and electrocardiographic observations were recorded daily. If we exclude three cases of hyperthyroidism, the action of the drug on the heart in all cases, measured by clinical observations, was similar to that of digitalis. Its emetic action was pronounced in all cases except one, and occurred with the smallest doses that had any demonstrable effect on the heart. Its action on the heart, as judged by slowing of the rate, lessening of the pulse deficit, and improvement in symptoms, was extremely transient, disappearing in most cases within forty-eight hours, and in many within twenty-four hours, after it had been stopped. Blood pressure determinations showed no changes worthy of mention. Vital capacity determination showed in the majority of cases a slight increase following the administration of the drugs, the increase being coincident with, and roughly parallel to, clinical improvement. Electrocardiograms showed inversion of the T deflection in Lead II in three cases, and slowing of the ventricular rate in all. Digitalis administered subsequently in the same cases had a more pronounced beneficial effect, which lasted for many days and was not accompanied by the extreme discomfort which followed the use of apocynum.

13. Peabody, F. W., and Wentworth, J. A.: Clinical Studies of the Respiration, Arch. Int. Med. **20**: 443 (Sept.) 1917.

Table 2 indicates the effect of apocynum on some of the more important signs and symptoms of heart disease.

CONVALLARIA

Convallaria majalis, or lily of the valley, has been known in medicine for several hundred years. Laigre,[14] in 1903, refers to its use as early as 1580 by a French physician, who wrote concerning it: "The Germans use it much to fortify the heart, the brain, and other noble organs. They employ it also against palpitation." As far as one may judge from references to literature not now available, its use during the sixteenth and seventeenth centuries and a part of the eighteenth century was confined largely to cases requiring emesis or catharsis; but in 1770, according to Laigre, "the stimulating, diuretic and calming virtues of the plant in asthma due to cardiac trouble" were recognized by Ferrein. Since 1880, a large majority of all articles concerning its therapeutic use have emphasized its "truly remarkable diuretic properties," and at least one writer has pleaded for its universal adoption under the attractive caption: "Convallaria, the Vegetable Trocar." It is difficult to escape the conclusion that convallaria has been effective in causing diuresis in certain cases reported, but the literature is confusing because of the number of different preparations of the plant which have been employed. Thus, Moriquard[15] and Dellenbaugh[16] have recommended the infusion of the leaves, Germain See[17] preferred the aqueous extract of the whole plant; Hurd[10] used the fluidextract of the root, while Laigre[13] recognizes differences in the action of the two glucosids contained in the plant, convallarin and convallamarin, and urges the use of these glucosids.

The official (N. F.) preparation in this country is the fluidextract of the root, and it is this preparation which was used in the present study.

The method of study has been given in detail in an earlier section of the paper, and need not be discussed again. The cases studied were selected in the same manner as those for the apocynum investigation, and were twelve in number, all of them being cases of heart disease complicated by auricular fibrillation. Of these twelve, three were cases of hyperthyroidism, but they did not form so distinct a group in this study as they did in the other. The remaining nine cases comprised five with rheumatic heart disease and four with cardiosclerosis.

It is readily seen from Table 3 that convallaria, tested on the frog's heart, possesses the same strength as apocynum and is approximately three times as powerfull as digitalis.[11]

The dose of the fluidextract recommended is 0.5 c.c.; the dose employed by us in almost all cases was as large as 5 c.c., three times a day, and in many cases as high as 10 c.c.; one patient actually receiving 15 c.c., three times a day. In the first few cases, we began treatment with the dose recommended, but finding it without demonstrable action, we increased it rapidly. In later cases, we began routinely with doses of 5 c.c., three times a day.

14. Laigre, J.: Muget et suc de muguet, Revue de thérap. méd.-chir. **51**: 757, 1903.

15. Moriquard, G., and Jujol, G.: On the Diuretic Action of the Infusion of Lily of the Valley in Children, Progrès Med. **28**: 499, 1912.

16. Dellenbaugh, Z. P., quoted in New York Medical Record **28**: 196, 1882.

17. See, Germain: On Cardiac Hypertrophy, etc., Semaine méd., 1885, p. 3.

RESULTS

Production of Heart Block; Clinical Improvement.—In regard to the action of the drug, the twelve cases may readily be divided into two groups: those which responded with improvement, and those which showed no change whatever or actually grew worse. The first group is composed of two cases; the remaining ten fall into the second. The criteria used for estimating clinical improvement were those already mentioned: lowering of apex rate, diminution in pulse deficit, diuresis, and a decrease in such symptoms as dyspnea, cough, palpitation, insomnia, anorexia and headache, as well as the patient's sense of well-being, or the reverse. The two patients who showed clinical improvement were cases of cardiosclerosis without evidence of valve damage; in both, the action of the drug was similar to that of digitalis (given subsequently) except that one of them did not show inversion of the T deflection of the electrocardiogram. Heart block was produced in six cases. Further details are given in Table 4.

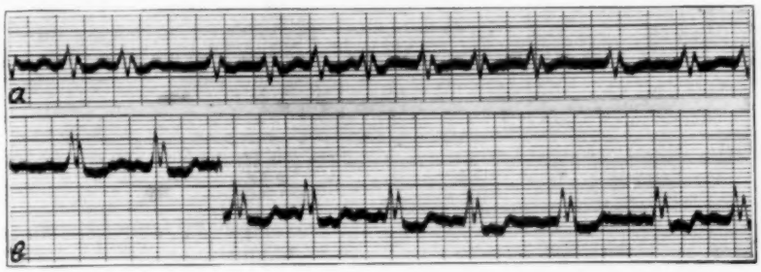

Fig. 1 (Case 8, apocynum).—Cardiosclerosis, right bundle branch block: *a*, Lead II, just before apocynum was started; ventricular rate, 140; T wave positive and averages 0.1 millivolt in height. *b*, Lead II, three days later; rate, 90; T wave diphasic, averaging minus 0.2 millivolt and plus 0.1 millivolt. Q R S complex shows marked increase in amplitude. Total amount of apocynum, 4 c.c. (In this and the succeeding electrocardiograms, distances between ordinates represent 0.2 second; between abscissas, 10^{-4} volt.) The change in level of the string indicates a change in potential of 1 millivolt of current, and is inserted to show standardization of string tension.

It is interesting to note the reasons for stopping the drug in the ten cases which did not show improvement. They are: slowing of the heart rate (without any improvement in symptoms), one; excessive diarrhea and abdominal pains, one; increase in signs and symptoms of heart failure, one; simple failure to improve, even with massive doses, one; failure to improve plus nausea or vomiting, six.

Nausea and Vomiting.—As noted above, this occurred in a majority of the cases—nausea in nine, and vomiting in six. In no case was the nausea or vomiting so intense and distressing as that seen following the administration of apocynum.

Duration of Action.—The transient nature of the action of this drug is definite, but not so marked as in the case of apocynum. In several cases, there was an increase in the rate of the heart and recurrence of symptoms within twenty-four hours after the drug was withdrawn. The time elapsing between the stopping of convallaria and the administration of digitalis, however, averaged about three days for the whole series, the extremes being three hours, and seven days.

Diuresis.—It is unfortunate that only two of our cases showed edema at the time of giving convallaria. In both of these, the edema was decreased, and in one it disappeared entirely. The latter case is the one which showed the greatest clinical improvement of the entire twelve.

Vital Capacity.—This was determined daily in nine cases, the other three being patients at the House of the Good Samaritan. In only six was there an increase of as much as 100 c.c. In the two patients who showed clinical improvement, the percentage of increase in vital capacity was greatest. No comparison between vital capacity increase and clinical improvement is possible in the remaining cases, because there was no clinical improvement.

Blood Pressure.—Blood pressure determinations (maximal beats) were made in seven cases in this series, readings being made at intervals of two days. Comparison of the figures before, during and after the period of convallaria administration shows that the greatest change was 10 mm. of mercury, which occurred in one case (a rise during the time the patient was receiving convallaria). This had returned to its previous level within two days. No other case showed a change in systolic or diastolic pressure greater than 4 mm., at any time.

Diarrhea.—This occurred in six of the cases, being slight in two cases, moderately severe in three, and very severe in one. As there had been no change whatever in the regimen of these patients, except the administration of convallaria, and as the diarrhea stopped promptly when the drug was withdrawn, it seems fair to conclude that there may have been a causal relation between the two.

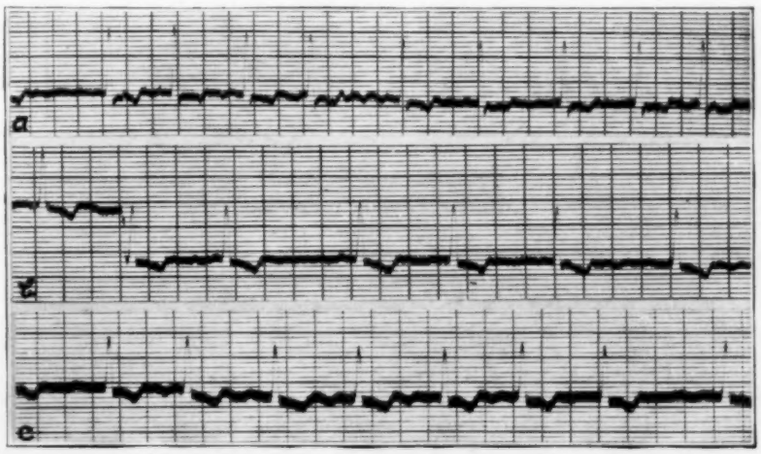

Fig. 2 (Case 3, apocynum).—Rheumatic heart disease, mitral stenosis. *a*, Lead II, taken at 9 a. m., before apocynum. (Inversion of T due to digitalis taken the previous week.) Rate, 110; T wave inverted (minus 0.1 millivolt). *b*, Lead II, taken at 6 p. m., after two doses of apocynum, 1 c.c. each. Rate, 84; T wave more deeply inverted (minus 0.25 millivolt). *c*, Lead II, taken five days later, after digitalis 1.2 gm. Rate, 84; T wave inverted (minus 0.25 millivolt).

Changes in Electrocardiogram.—Eight cases had daily electocardiograms, and of these, three showed a definite inversion of the T deflection in Lead II. Of the remaining five, two showed reduction in the ventricular rate, and three showed no changes whatever.

Comparison with Digitalis.—Of the twelve patients, ten received digitalis subsequently. (Two patients left the hospital against advice before receiving it.) In all

ten cases, the administration of digitalis was followed by definite, prompt improvement, subjective and objective, showing that the failure of convallaria to act was not due to any peculiarity of the patients.

SUMMARY

The action of fluidextract of convallaria has been studied in twelve cases of heart disease complicated by auricular fibrillation. The drug was given by mouth in doses varying from 0.5 to 15 c.c., three times a day. It was followed by clinical improvement in two cases; in the remaining ten, it had no favorable action on the heart and circulation, and in several it caused unfavorable symptoms which demanded its discontinuance. Nausea or vomiting occurred in nine cases; diuresis in the two patients who showed edema at the beginning of treatment. Diarrhea was noted in six cases, and was of moderate or marked severity in four. Blood pressure determinations showed no changes. Vital capacity was increased in six instances; in only three was the increase marked. In only two cases was there any evidence of a sedative action, and in one of these it was so slight as to be questionable. Electrocardiograms showed in three instances a typical digitalis-like inversion of the T deflection in Lead II. The action of the drug was very transient. Digitalis given subsequently in the same cases had a uniformly prompt and favorable action.

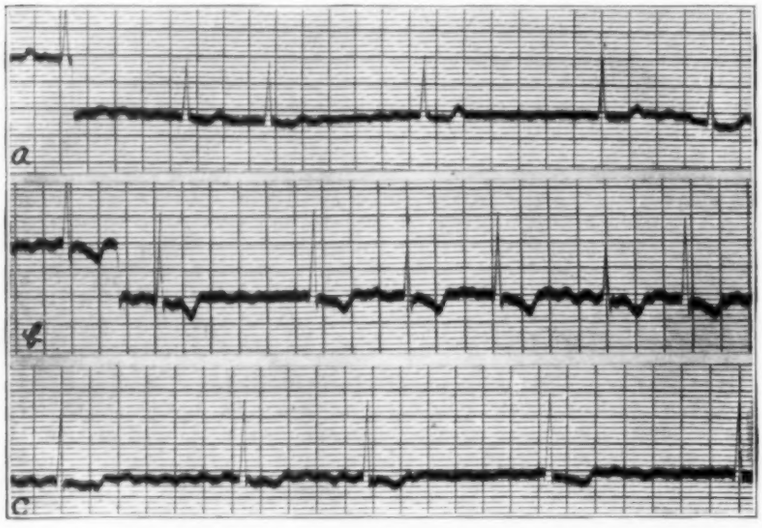

Fig. 3 (Case 5, convallaria).—Rheumatic heart disease, mitral stenosis: *b*, Lead II, taken three days after starting convallaria; shows deep inversion of the T wave (minus 0.3 millivolt); total amount of drug, 30 c.c. *a*, Lead II, taken six days after *b* (six days after stopping convallaria), showing that the normal wave in this patient is positive (plus 0.1 to 0.2 millivolt). *c*, Lead II, taken six days after *a*, showing inversion from 1.3 gm. of digitalis (minus 0.15 millivolt).

CONCLUSIONS

1. The results of clinical studies on the fluidextract of Apocynum cannabinum indicate that the drug has, in some degree, a digitalis-like action in cases of heart disease with auricular fibrillation. Its possible usefulness in the treatment of heart failure, however, is markedly limited by the discomfort, nausea and vomiting which invariably follow its administration in doses sufficiently large to affect the heart.

2. In one case of auricular flutter, the administration of apocynum was followed within several hours by a change to auricular fibrillation. The drug was withdrawn, and normal rhythm was resumed two days later. So far as we are aware, this is the first case reported illustrating the action of apocynum in auricular flutter.

3. Similar clinical studies on the fluidextract of Convallaria majalis indicate that only in occasional cases does it have any favorable action on the heart in auricular fibrillation; even in these occasional cases, its action does not resemble that of digitalis in all details.

4. It would seem from our results that neither apocynum nor convallaria can be used as substitutes for digitalis. In our experience, digitalis has been characterized by quicker action, more pronounced effects, less discomfort, and more prolonged improvement, than are seen following either of the other drugs. We are convinced that both of these members of the digitalis series have no place in the rational treatment of heart failure.

ABSTRACT OF DISCUSSION

DR. ROBERT A. HATCHER, New York: A single study such as this increases our knowledge of apocynum and convallaria more than all of the work of the century preceding. I should like to call attention to the similarity of results to those obtained in our laboratory in one case, and the dissimilarity in the other. We found that massive doses of convallaria might be given orally without perceptible effects in some cases. This corresponds quite well with the observations just reported. Fifteen cubic centimeters of fluidextract of convallaria is equivalent in cardiac activity to 45 c.c. of tincture of digitalis. That dose of convallaria was given several times in the course of a day. If this study will result in the dismissal of convallaria from the materia medica, the authors will have performed a great service. It is, of course, beyond question that many clinicians are not prepared to make such careful observations, and that they will often confuse the results of the drug with cardiac disease; and, failing to observe an improvement with ordinary doses, they will push the administration of a drug of this type until the patient dies of digitalis poisoning. In other cases in which they rely on the drug, the patient goes on to death through the want of any relief at all. In the case of convallaria the results here reported clinically are in harmony with those in the laboratory of pharmacology. As to apocynum, the

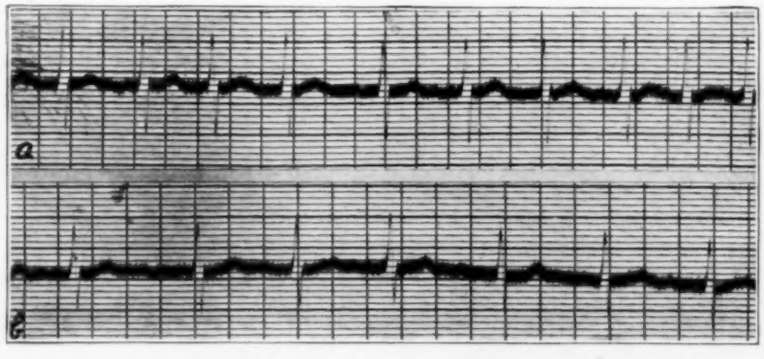

Fig. 4 (Case 12, convallaria).—Cardiosclerosis: *a*, Lead II, taken before starting convallaria; rate, 120; T wave positive (plus 0.15 millivolt). *b*, Lead II, after seven days of convallaria, total dose of 105 c.c.; rate, 84; T wave still positive (plus 0.1 millivolt).

difference is more apparent than real. In some cases the nausea occurs in a few minutes after the administration of a moderate dose of apocynum, and there was no greater effect in many cases from ten times as much because rapid emesis or purgation prevented further absorption. When emesis fails to occur, rapid absorption of the toxic dose may take place. While it is safe to use such drugs when they are observed as carefully as in this case, they are dangerous in the hands of the clinician not prepared to make these observations. I hope we will dismiss from the materia medica the members of this group, which have no advantage over digitalis.

DR. PAUL D. WHITE, Boston: It is very often of interest to compare the action of different drugs on the same subject. One can form conclusions of great value, when the individual variations may be dispensed with in this way. One of the subjects now reported by Dr. Marvin was also a subject of our squill investigation last year. She was a woman, aged 36, who had rheumatic heart disease and auricular fibrillation. She received 1 gm. of digitalis by mouth at one dose. The result showed marked objective and symptomatic improvement. The pulse became much slower than before the large dose with less deficit. Toxic effects were negligible. The apical pulse rate dropped from 130 to 55 within twenty-four hours. This showed very strikingly the digitalis effect. Several weeks later, tincture of squill was administered, 2 c.c., three times daily. During the next five days she received 32 c.c. of tinture of squill with absolutely no effect until, finally, nausea occurred. There was no increase in urine output; marked pulse deficit persisted; the apex rate was 138; there was no drop in pulse rate from squill. The patient was symptomatically worse. Later on in other patients, we found it necessary to increase the dose of tincture of squill to 2 or 4 drams in order to get digitalis action. This patient received fluidextract of apocynum. A single dose of 1 c.c. was promptly vomited. Another dose of 1 c.c. was given in three hours, and a second dose of 0.36 c.c. three hours later. At the time of the first dose, the apex rate was between 160 and 170; the radial rate was 70. The patient was suffering from precordial pain, extreme palpitation of the heart, marked dyspnea, and a sense of fulness in the abdomen. There was slight cyanosis of the hands, lips and face. Four and a half hours after the last dose of apocynum, the pulse rate was 60 at the apex and wrist, and all of the symptoms mentioned had disappeared. However, the drug caused intense nausea and persistent vomiting followed. On another occasion 13.6 c.c. of the fluidextract of convallaria was given in six days. Considerable subjective improvement resulted, but nausea and vomiting necessitated stopping the drug. The apex pulse rate had dropped from 118 to 80, and the pulse deficit from 28 to zero. The effect was transient, the recurrence of tachycardia requiring digitalis within three days.

DR. CARY EGGLESTON, New York: A remarkable feature in the observations on apocynum is the question of the apparent dissociation between its emetic action and its cardiac action. All of the digitalis bodies are capable of producing emesis and virtually solely after absorption by central stimulation. In the case of digitalis, while emesis is a frequent occurrence, it almost never occurs so early as to interfere with the development of therapeutic effects. In the case of apocynum it was striking that in almost all instances emesis developed very early and with much smaller doses than were required to produce therapeutic effects. Drs. Marvin and White show that even though apocynum was apparently rapidly absorbed from a single dose, the amounts required to produce therapeutic effects were very much larger, in terms of activity, than those required in the case of digitalis. They found that an average of 9 c.c. of fluidextract of apocynum was required to produce therapeutic effects. This, when reduced to terms of activity, corresponds to 270 c.c. of tincture of digitalis as the average dose required, which is approximately ten times the average dose; so that even when the drug is given in doses which do not promptly produce vomiting, and even though, as indicated by the vomiting, its absorption is rapid the development of its action on the heart is very slow.

DR. HAROLD M. MARVIN, Boston: In trying to investigate the extent to which these drugs are now employed clinically, one of our methods was to request a report of yearly sales from some of the leading pharmaceutical houses. Three of them were kind enough to send us their figures. One reported that sales had fallen off materially; two reported that there had been but little reduction in the annual sales, which amounted to about 15,000 pints of the fluidextract.

VALUE OF BONE PIN ARTHRODESIS IN THE TREATMENT OF FLAT FOOT *

ROBERT E. SOULE, M.D.
NEWARK, N. J.

In spite of the various methods employed for the relief of flat foot there still remains a large percentage which do not respond to the generally recognized methods of treatment, many of which are pronounced

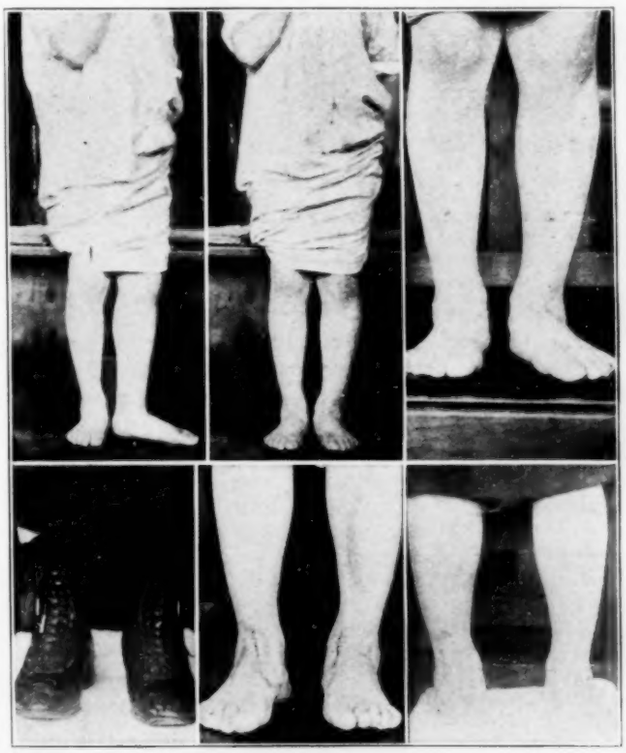

Fig. 1 (G. P., girl, aged 14).—Above, before operation: double painful relaxed, pronated feet; position of feet in weight bearing. Below, after operation by author's bone pin arthrodesis: correction obtained in position of the feet in weight bearing; patient walks, dances and skates with ease and no discomfort or pain.

incurable. This percentage I wish to consider in this paper, viz., those cases which have resisted all reasonable attempts at correction, or those who from age, occupation, duration and severity of deformity and disability have caused me to resort to operative cure rather than lose more time in attempts at relief by further palliative methods.

The relaxed pronated foot comprises from 70 to 80 per cent. of all cases of flat foot and has proved the most difficult of all to cure permanently, over half of them being of congenital origin. The acutely rigid painful pronated flat foot, however, is more easily

* Read before the Section on Orthopedic Surgery at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

rectified. From my standpoint, surgery offers the most rational solution in these refractory cases of relaxed pronated foot, and I have found the results so satisfactory that I am resorting to it more and more.

When this disability is congenital in origin, what certainty of cure can we expect to establish by muscle

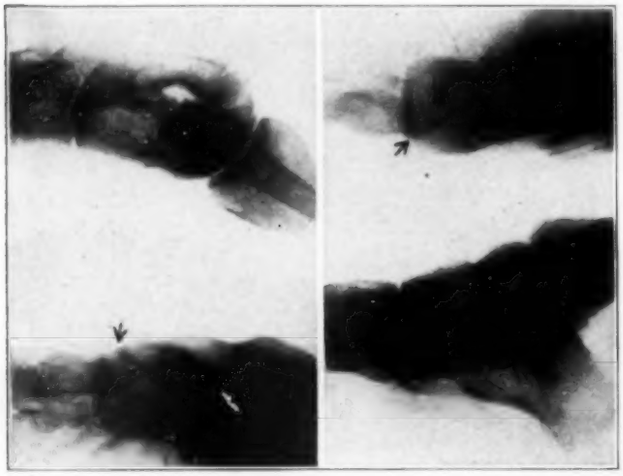

Fig. 2 (G. P.).—Four years after operation: dorsoplantar and lateral views of the feet, showing the amalgamation obtained between the astragalus and scaphoid, with a faint shadow of the pin (indicated by arrow) still showing.

training, particularly if the patient is an adult? We cannot hope in any reasonably short time to develop sufficient change in the musculature of the leg and foot to produce a permanent correction, and unless the patient keeps up the special muscle training everlastingly he is liable to a relapse. I might quote as a fair example a young man who came under my observation while in the military service. He tried to enter West Point but was rejected on account of the condition of

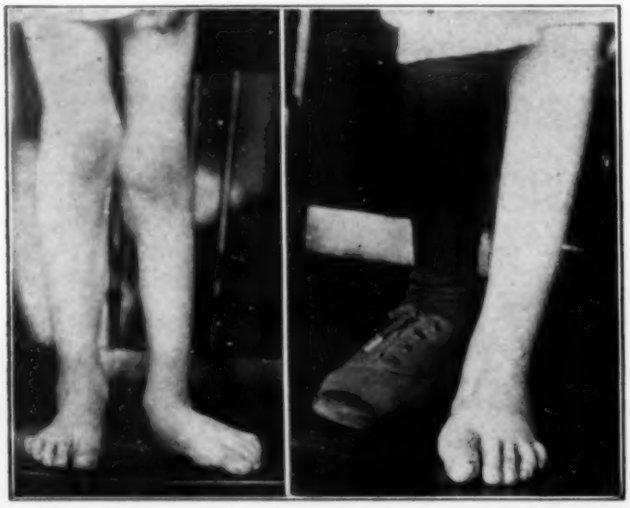

Fig. 3 (S. M., boy, aged 7).—At left, before operation: marked valgus deformity of left foot as a result of infantile paralysis. At right, after operation by author's bone pin arthrodesis: corrected position of foot in weight bearing.

his feet, which were relaxed and pronated and undoubtedly painful. He consulted a well known authority and was assured that this difficulty could be corrected. It was corrected and he passed his physical test for West Point. Shortly thereafter he was subjected to certain endurance training and he was obliged to give up his appointment. Later on he enlisted and was sent to the Mexican border, where his feet again gave out and he became hospitalized. He spent a large portion of his enlistment period in the hospital, and when he came under my observation he could hardly walk at all, part of the time being confined to bed because of the pain and weakness of his feet. This is but one of the many cases I encountered during my military service which have demonstrated to me most emphatically the necessity for some more effectual method of relief.

ANATOMY AND PATHOLOGY OF A RELAXED, PRONATED, PAINFUL FOOT

The weakest part of the foot is at the midtarsal joint, the astragaloscaphoid and calcaneocuboid articulations. The strain of muscle pull and leverage relaxes these joints; the muscle balance is broken; adductors and dorsiflexors of the foot do not function equally with the abductors and extensors. The forefoot everts

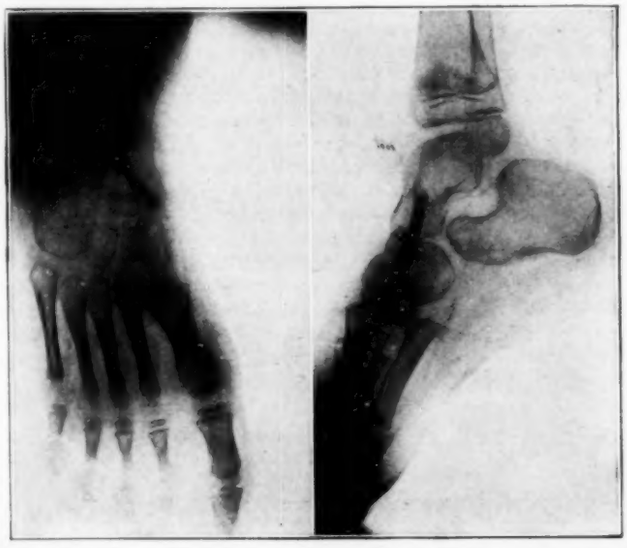

Fig. 4 (case of valgus from infantile paralysis).—Dorsoplantar and lateral views four months after operation, showing the pin in position in the astragalus and scaphoid.

and pronates, causing the scaphoid to rotate about the head of the astragalus somewhat, and, as the forefoot abducts and rotates, a leverage force is applied to the os calcis which tends to pry that bone farther away from the perpendicular plane of body weight bearing; and, as the mesial border of the forefoot pronates and everts, the head of the astragalus dips down toward the plantar surface. Owing to the security of the position of the astragalus between the malleoli, fortified by the short, strong ligaments and no muscle attachments, it moves only within the limits of its function with the tibia fibula astragalus joint, in flexion and extension. Therefore, having a secure point of anchorage in the astragalus, if the forefoot is rotated back about the head of the astragalus and adducted to restore the proper alinement of the mesial border of the tarsus, the long arch is raised, the contour of the foot restored, and the perpendicular plane of weight bearing of the foot corrected. If now this position of the foot and leg can be maintained, which can be done by ankylosing the astragaloscaphoid joint, the

deformity and disability can be permanently overcome, and not in an indeterminate time, but in the definite time required to produce a solid, bony, unyielding union of astragalus and scaphoid.

This I have done repeatedly with the result above referred to, restored contour of the foot and its proper relation with the leg, with the permanent relief of the painful disability.

TECHNIC

The foot and leg having been prepared and a tourniquet applied above the knee to insure a bloodless field, the astragaloscaphoid joint is exposed through a skin incision from 1½ to 2 inches long on the dorsum of the foot, along the course of the anterior tibial tendon. The astragaloscaphoid joint ligaments are dissected away, and the forefoot plantar flexed, exposing the joint surfaces.

With the author's double curved osteotome, five-eighths inch wide, and curved to conform to the ovoid of the head of the astragalus, the contacting joint cartilages are removed from the astragalus and scaphoid, preserving the normal curved surface contact when the forefoot is restored to the desired relation to the leg. At the distal end of the skin incision the mesial projection of the scaphoid is exposed. With the foot held by an assistant in its corrected position, a drill is driven through the mesial projection of the scaphoid into the head of the astragalus, extending in all from 1½ to 1¾ inches, depending on the size of the bones drilled. The drill is disengaged from the motor and left in situ while the bone pin is removed from the antero-internal surface of the tibia and shaped to fit the hole drilled. The foot is again securely held in position while the drill is removed and the bone pin substituted. The skin wound is closed by continuous catgut suture without drainage and flat dressings are applied, followed by a flannel bandage from toes to knee and a plaster-of-Paris case applied with the foot at a right angle to the leg. This case is left on for four weeks, when active and passive movements are began. Light weight bearing begins the sixth week for a couple of weeks, and from then on full weight bearing is allowed, with caution to the patient to refrain from overtire of foot and leg. Massage, active and passive exercise are continued to hasten the restoration of muscle tone.

The cases I am reporting include all in which I have operated by my pin graft method and followed

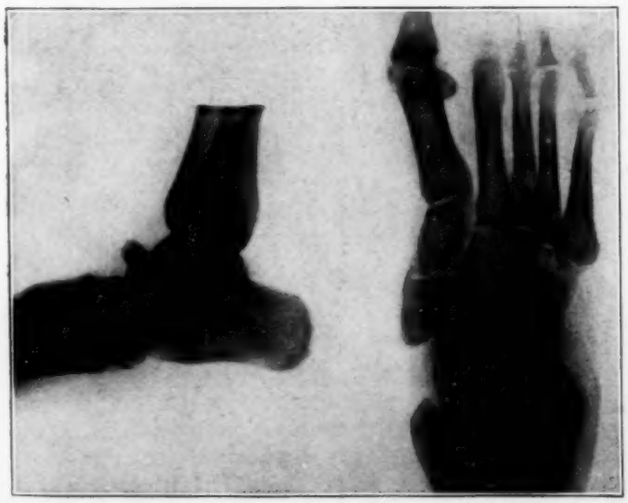

Fig. 5 (J. M., man, aged 35).—Fracture of astragalus and displacement of scaphoid before operation.

thereafter so far as I was able. They include: ten patients in 1915, ranging in ages from 7 to 36 years, each with one foot operated on; nine patients in 1916, ranging in ages from 6½ to 56 years, of whom three had a single foot operated on and six had both feet operated on; two patients in 1917, one of whom, aged 9 years, had a single foot operated on and one, aged 35 years, had both feet operated on; one patient in 1919, aged 28 years, who had one foot operated on; three patients in 1920, of whom, two, aged 12 and 35 years, had one foot operated on, and one, aged 45 years, had both feet operated on; four patients in 1921, three of

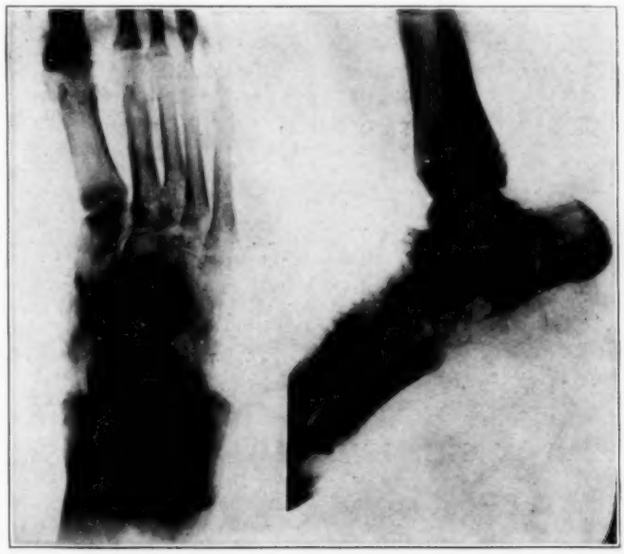

Fig. 6 (J. M.).—Condition after operation by author's bone pin graft arthrodesis, showing correction of the displaced scaphoid pinned to the astragalus. A year later the patient was entirely relieved of his painful disability. He told me at this time that he went to work six weeks after the operation.

whom, from 12 to 45 years of age, had one foot operated on, and one, aged 25, both feet. These make a total of twenty patients with one foot operated on and nine with both feet operated on, or twenty-nine altogether with a total of thirty-eight feet operated on. In one case of double operation, when the patient was last seen, about three months after operation, there seemed to be a slight exaggeration in correction. This patient was operated on in 1916 and could not be traced further. In one case of double operation, Jan. 21, 1921, of rheumatic arthritis with poor bone production and formation of callus, the pin broke in one foot about ten weeks after the operation, owing to nonunion of the astragalus and scaphoid. The plaster of Paris was replaced, and the patient is still under treatment. The other foot is secure. This is the only case which has thus far failed in bony union. Cases reported in which operation was performed below the age of 8 years were either instances of pronation and valgus deformity following infantile paralysis or deformity in conjunction with some mental defect. In cases in which the patients were under 8 years of age, a simple arthrodesis would be inadvisable except by this pin graft method providing a bone nucleus connecting ossifying centers.

This bone pin arthrodesis was done to relieve: (1) congenital pronated painful foot disability; (2) relapsing rigid flat foot; (3) ostearthritis of the feet with pronation; (4) rheumatic arthritis of the feet, with pronation; (5) valgus foot deformity from infantile paralysis or other acquired permanent paralytic valgus deformity; (6) pronated feet in mentally defective patients, and (7) fracture of the midtarsal bones with painful disability.

671 Broad Street.

ABSTRACT OF DISCUSSION

DR. H. WINNETT ORR, Lincoln, Neb.: Dr. Soule has given us a technical procedure of benefit in certain cases, but I believe this operation should be done with the greatest care and not at as early an age as Dr. Soule suggested. It should not be done before the age of 15. With regard to the after-care of these cases, I have had two patients complain of ankle strain. One must be on the lookout to avoid this for it is as bad as flat foot.

DR. EDWIN W. RYERSON, Chicago: It seems to me that the value of this operation would be increased if Dr. Soule would include an arthrodesis of the subastragaloid and calcaneo-cuboid joints because so much undesirable motion and deformity occur in these joints. This operation may be called a triple arthrodesis, and it gives excellent results. I think that this would be an improvement on Dr. Soule's admirable technic.

DR. ROBERT E. SOULE, Newark, N. J.: As to Dr. Ryerson's suggestion, I have done that in two cases, ankylosing the astragalo-os calcis by a similar method. But I said nothing about that case because the operation was done only about two months ago and it is too early to report results. The patient whose case I did report is now up and around and perfectly comfortable.

SPIROCHETAL PULMONARY GANGRENE*

B. S. KLINE, M.D.
NEW YORK

Evidence is accumulating that pulmonary gangrene may be caused by spirochetes and fusiform bacilli aspirated from an unclean mouth, and that it may be prevented by proper oral hygienic measures.

The first definite clinical and anatomic description of pulmonary gangrene was made by Laënnec about 1808.

Fig. 1.—Exudate from dental caries and pyorrhea alveolaris showing spirochetes and fusiform bacilli.

Although the condition was readily recognized and studied thereafter, it is probable that Leyden and Jaffe[1] in 1866 were the first to observe spirochetes in the sputum and gangrenous tissue of these cases. Little attention was paid to the possible etiologic relationship of spirochetes to bronchopulmonary lesions, however, until Castellani[2] in 1906 reported two cases of hemorrhagic bronchitis, simulating pulmonary tuberculosis, apparently caused by spirochetes. The

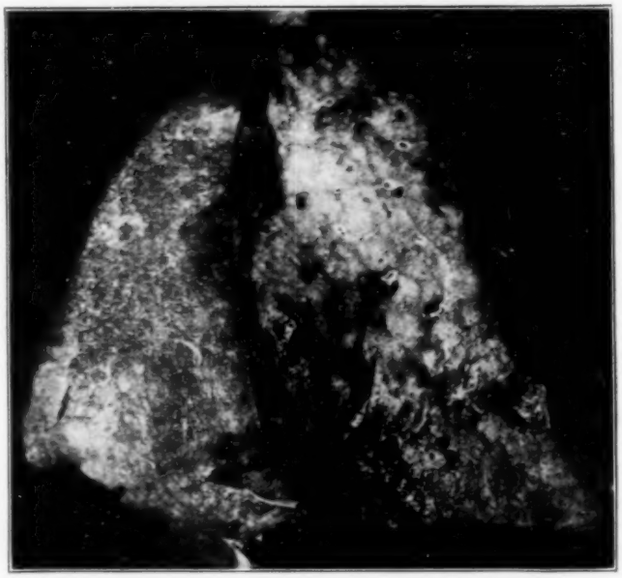

Fig. 2.—Extensive peribronchial pneumonia and bronchopneumonia with beginning gangrenous ulceration.

spirochetes observed in these two cases varied greatly in morphology: Castellani, who considered them varieties of one species, believed that they inhabited only the deeper air passages. To the condition he gave the name "bronchial spirochetosis." Since this communication, many cases have been reported from the tropics and Europe, but in the United States, including the three observed at the Montefiore Hospital, only seventeen cases have thus far been reported,[3] in which such spirochetes have been found associated with bronchopulmonary lesions.

Considerable discussion has been raised concerning the specificity of the spirochetes found in the sputum in these cases. Supporting Castellani, many subsequent observers consider them as different varieties of one species inhabiting only the deeper air passages. Since Chamberlain[4] in 1911 suggested the possibility of spirochetes migrating downward from the mouth, other observers[5] have felt that the bronchopulmonary changes may be brought about by fusiform bacilli and various spirochetes aspirated from the mouth in material from the buccal cavity, and from dental and gingival lesions.

Clinically, some of the seventeen casse in the United States were at first confused with tuberculosis. The sputum in some was jelly-like and blood tinged, in some hemorrhagic and in others purulent and foul smelling. In none of these cases did the sputum show

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* From the Laboratory of the Montefiore Hospital.
* Read before the Section on Pathology and Physiology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

1. Leyden, E., and Jaffe, M.: Deutsch. Arch. f. klin. Med. **2**: 488, 1866-1867.

2. Castellani, A.: Lancet **1**: 1384, 1906.

3. Johnson, W. B.: Memphis M. Month. **29**: 183, 1909. Rothwell, J. H.: Bronchial Vincent's Angina, J. A. M. A. **54**: 1867 (June 4) 1910. Peters, W. H.: J. Infect. Dis. **8**: 455, 1911. Lewis, G. W.: U. S. Naval M. Bull. **14**: 149 (Jan.) 1920. Fishberg, Maurice, and Kline, B. S.: Spirochetal Pulmonary Gangrene, Arch. Int. Med. **27**: 61 (Jan.) 1921. Levy, M. D.: New York M. J. **113**: 186 (Jan. 29) 1921. Bloedorn, W. A., and Houghton, J. E.: Bronchial Spirochetosis, J. A. M. A. **76**: 1559 (June 4) 1921.

4. Chamberlain, W. P.: Philippine J. Sc. **6**: 489, 1911.

5. Macfie, J. W. S.: J. Trop. Med. & Hyg. **18**: 63, 1915. Rothwell, W. B. (Footnote 3). Fishberg, Maurice, and Kline, B. S. (Footnote 3).

tubercle bacilli. It contained, however, numerous spirochetes, varying considerably in morphology and sometimes associated with fusiform bacilli. Recovery was reported in the majority. Four cases were studied postmortem. The disease occurred in about equal frequency in males and females, the patients ranging in age from 4 to 76 years. The patients observed at the Montefiore Hospital were foreign born but had lived in the United States for the past six, forty-six and fifty-six years, respectively.

In all probability there have been and are a great many unrecognized cases of bronchopulmonary spirochetosis in the United States. The fact that the organisms are poorly stained by the usual laboratory methods and do not grow in the usual laboratory mediums may account for the failure in the past to observe them. Since the organisms are readily demonstrated in smears stained by the Fontana method and in tissues stained by the Levaditi method, as well as being cultivable, these procedures are indicated for diagnosis.

My attention was called to this lesion in October, 1918, in the course of a necropsy on a soldier dying some time after mustard gas inhalation. In addition to the usual lesions there were marked dental caries and pyorrhea alveolaris, gangrenous tracheitis and bronchitis, and gangrenous ulceration of the lung with cavity formation. Smears from the teeth and gums and bronchopulmonary lesions stained by a modified Fontana method showed large numbers of spirochetes and fusiform bacilli.

THREE CASES OF PULMONARY GANGRENE

In the series of 130 necropsies at the Montefiore Hospital from May, 1919, gangrenous ulceration of the bronchial branches and the lung were noted in three. All three had dental caries and gingivitis, the exudate from which was yellow or green, of foul odor, and microscopically showed large numbers of fusi-

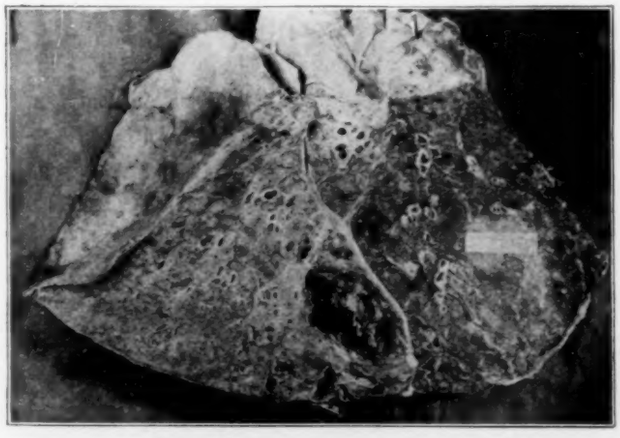

Fig. 3.—Extensive peribronchial pneumonia and bronchopneumonia with gangrenous ulceration and cavity formation, left lower lobe.

form bacilli and spirochetes varying considerably in morphology. These spirochetes resemble *Spirochaeta* (or *Treponema*) *buccalis, vincenti, microdentium, mucosum* and *macrodentium*. In addition, the smears show the usual mouth bacteria. Organisms morphologically indistinguishable from all these are present in the acute and subacute pulmonary lesions, the fusiform bacilli and spirochetes being especially numerous in areas of early gangrenous ulceration.

ORAL LESIONS

In the three cases the majority of teeth are absent; those remaining are in poor condition, a number show-

Fig. 4.—Healed and healing gangrenous cavities, right upper lobe.

ing erosions and cavities filled with foul-smelling, slimy, yellowish-green material. The gums in each case are spongy, red and ulcerated, and covered by a considerable amount of foul-smelling, slimy, yellowish-green exudate.

GROSS PULMONARY LESIONS

In the three cases, both lower lobes are consolidated. In addition, the right middle is involved in one case and the right upper in another case. All three cases show a bronchitis, peribronchial pneumonia and bronchopneumonia of both lower lobes varying in extent, sometimes involving practically an entire lobe, and somewhat similar in appearance to numerous small areas of gelatinous and early caseous tuberculous pneumonia. Older lesions consist of beginning gangrenous ulceration of smaller bronchial branches and consolidated lung, usually in the apical portion of a lower lobe, but also elsewhere. This gangrenous tissue is greenish yellow to dark green, and has a penetratingly foul odor. Apparently older lesions are definite gangrenous cavities with green, foul-smelling, necrotic inner walls. Still older lesions are present in one case, and consist of cavities in the right upper lobe encapsulated by firm, gray-white tissue and firmly consolidated lung. Adjacent thereto are groups of alveoli having a greasy, yellow appearance, not unlike those seen in the neighborhood of an old tuberculous cavity.

A few of the cavities toward the apex, apparently the older ones, are lined by a smooth, delicate membrane.

HISTOLOGY OF THE PULMONARY LESIONS

Microscopically, the early lesions show a swelling of the bronchial mucosa with engorged blood vessels and

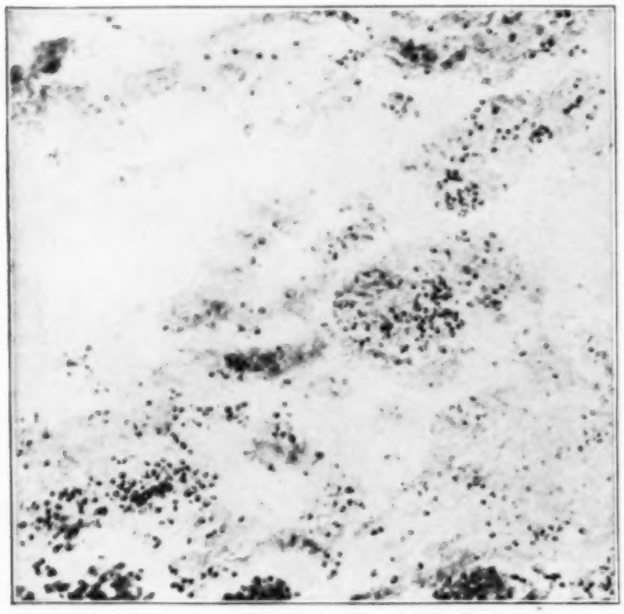

Fig. 5.—Pulmonary gangrene.

round cell infiltration. The pneumonia at first is desquamative, desquamative to purulent, and purulent in character. In places there is considerable infiltration of alveolar walls. In sections stained by the Levaditi and Goodpasture methods, numerous mouth organisms, including a number of fusiform bacilli and scattered spirochetes, are observed in these areas. More advanced lesions show necrosis of consolidated lung with beginning cavity formation. Smears and sections of these areas stained by the Fontana and Levaditi methods, respectively, show fusiform bacilli and various spirochetes as the predominating organisms. Other mouth organisms are present in only moderate number. Older lesions microscopically show portions of well defined cavities, with necrotic inner wall and a varying amount of encapsulating granulation tissue. There are also areas of organization of exudate in and between alveoli. Some sections show necrosis of organized areas. Sections of these older areas show organisms of the types described above, much fewer in number, however. The oldest lesions observed microscopically show portions of cavity walls composed of granulation tissue lined by pavement epithelium, considerable neighboring scar formation and groups of alveoli lined by cuboidal to columnar epithelium containing in the lumen collections of greatly vacuolated large mononuclear cells. In these areas also, many of the good sized arterial branches show a greatly thickened intima and an almost completely obliterated lumen. These older lesions are very much like old tuberculous ones. Sections of the pulmonary lesions in the various stages, stained by the Ziehl-Neelsen method, show no acid-fast bacilli. In none of the cases was active pulmonary tuberculosis observed in the gross or microscopically.

COMPLICATIONS

One case is complicated by an abscess of the brain, smears and sections of which show cocci, numerous fusiform bacilli and spirochetes of the types described above. The abscess wall is faintly green colored. Another case is associated with a carcinoma of the esophagus which likewise showed gangrenous ulceration of portions of the tumor. In the necrotic portions, numerous fusiform bacilli and spirochetes are present.

COMMENT

In these three cases, as well as in a number of those reported previously by others in which spirochetes and fusiform bacilli were found in the pulmonary lesions, a striking thing is the fact that apparently similar organisms were constantly present in lesions of the mouth.

That the presence of these organisms in lesions of the mouth may have been of great importance in the pathogenesis of the subsequent pulmonary lesions is apparent from the knowledge that the lung may be infected by bacteria aspirated from the mouth during surgical anesthesias, unconsciousness following exhaustion and even during normal sleep.

This explanation, opposed to that which claims for the organisms a primary habitat in the bronchi, suggests the possibility that spirochetal pulmonary gangrene may be prevented by proper oral hygienic measures.

CONCLUSIONS

1. In three cases, the presence in large numbers of fusiform bacilli and spirochetes in early gangrenous ulceration of the lung suggests their etiologic relationship thereto. These spirochetes morphologically

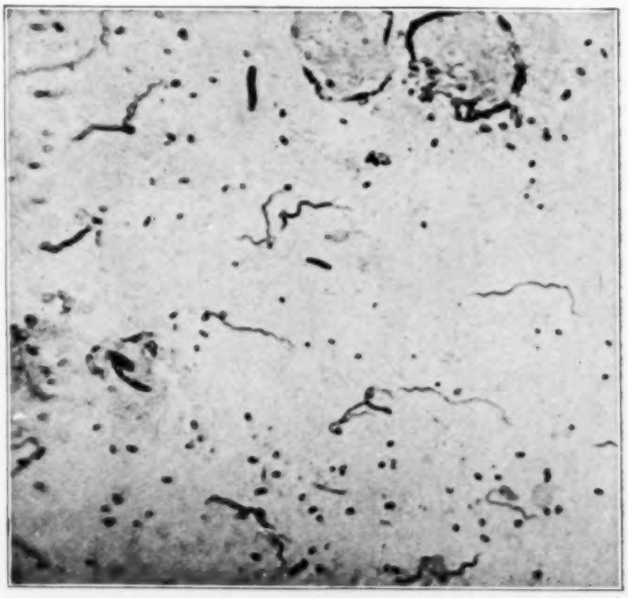

Fig. 6.—Smear from early pulmonary gangrene (Fontana stain) showing spirochetes and fusiform bacilli.

resemble *Spirochaeta* (or *Treponema*) *buccalis, vincenti, microdentium, mucosum* and *macrodentium.*

2. In all three cases, marked dental caries and pyorrhea alveolaris were present. Smears from these lesions showed organisms morphologically indistinguishable from those mentioned above.

3. These organisms, which are poorly colored by the usual laboratory stains, are readily demonstrated by the Fontana method in smears and by the Levaditi method in tissues.

4. From a study of the pulmonary lesions in these three cases, the impression is gained that they are

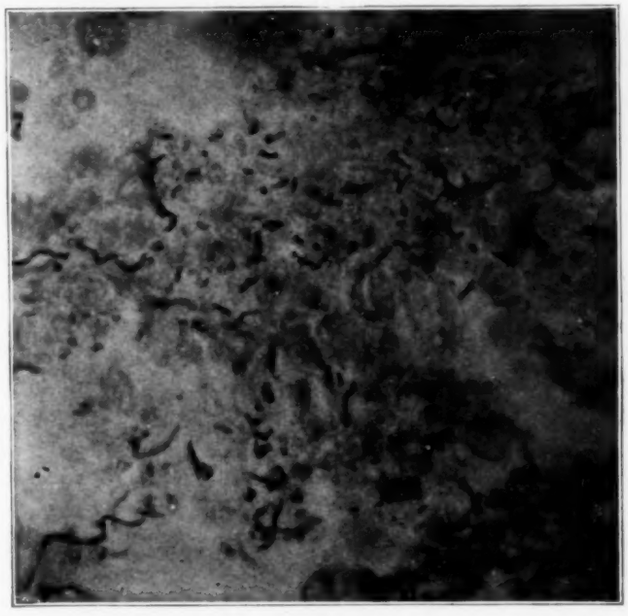

Fig. 7.—Gangrenous lung (Levaditi stain) showing spirochetes and fusiform bacilli.

extensive pneumonias, caused by organisms from the unclean mouth, in which gangrenous ulceration occurs because of activity of the aspirated fusiform bacilli and spirochetes.

5. If the foregoing explanation is correct, this type of spirochetal pulmonary gangrene may be prevented by proper oral hygienic measures.

ABSTRACT OF DISCUSSION

DR. O. H. PERRY PEPPER, Philadelphia: At Camp Meade a patient died during the influenza epidemic. None of us understood the case. The patient had complete involvement of the lower lobe of one or the other side with what seemed to be chronic ulcerative purulent infection. His temperature curve was an exact replica of that seen in relapsing fever. He ran through, during our period of observation, three or four febrile periods. Prior to the development of the febrile period, he would develop a most intense swelling of the gums and an intense pyorrhea. In the discharge from the gums, a large number of Vincent's spirilla and fusiform bacilli were found; and the thought was in our minds at that time that there was some relationship between the development of this marked pyorrhea and the pulmonary symptoms. The roentgen ray did not help us; it merely showed a diffuse shadow. It seemed to us there was a definite relationship between the oral infection and pyrexial period with increased expectoration from the lung. At that time we were not familiar with the work of Violle and others, in fact, most of that work came out later. We went no further than to make a tentative diagnosis of involvement of the lung with Vincent's spirilla and fusiform bacilli. The man was not seriously ill; he did not die and had this relapsing fever. Have any of these cases approached that picture?

DR. JANE F. KENNEDY, Minneapolis: I have one idea in relation to this dental decay. I feel I have solved it. Since it is dental decay, it is necessary to clean up some of these mouths. We should keep the mouths of children clean.

DR. B. S. KLINE, New York: In regard to Dr. Pepper's case, I think there are quite a number of clinical types. We have seen, in addition to the cases reported, three others, one at necropsy. In one of the clinical cases, the history was somewhat like that of Dr. Pepper's case. The case I have reference to was one of eighteen years' duration preceding which there had been dental caries and extensive pyorrhea. For a number of years the patient had periodic hemorrhages from the lungs, as a prophylaxis against which he insists on being bled several hundred cubic centimeters every few weeks, and really thinks the venesections ward off pulmonary hemorrhage. In this case preceding the pulmonary hemorrhage there is expectoration of sputum, usually blood tinged, with jelly-like masses in it and also very small balls of foul smelling material that look not unlike the granules one finds in actinomycotic sputum, a little more irregular and friable, however. Smears made from these little granules showed spirochetes and fusiform bacilli. The remainder of the sputum did not show these organisms. Apparently one would expect to find his lungs in somewhat the condition of the advanced case described before. In regard to oral sepsis, how controlled and prevented, I think that condition can be left quite safely to the dentists, but certainly it is possible, I believe, to control pyorrhea and dental caries, at least to a considerable extent.

FOLLICULAR OR DENTIGEROUS CYST*

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MILWAUKEE

This type of cyst belongs to the group of neoplasms known as odontomas. They are the result of a perverted growth of some of the cells in a tooth follicle. The histologic characteristics of the tumor will depend on the particular cells of the follicle which become abnormal in growth. Odontomas have been variously classified by different authors. Scudder [1] gives the following classification, which is a modification of Bland-Sutton's list: (1) the dental root cyst; (2) the follicular or dentigerous cyst; (3) the compound or composite follicular cyst; (4) the adamantine epithelioma, and (5) the hard odontoma. A brief review of the

Fig. 1 (Case 1).—External appearance of unilocular dentigerous cyst before operation.

embryology of a tooth follicle may result in a better understanding of the pathogenesis of these tumors.

In the development of a tooth, the deeper or malpighian layer of the oral epithelium grows into the

* Read before the Section on Stomatology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

1. Scudder: Tumors of the Jaws, 1912.

mesodermic zone of the rudimentary jaw. The extended portion of this deep layer is called the epithelial cord. As the latter grows deeper into the jaw, it becomes the primitive organ which forms the enamel.

The papilla, formed by the surrounding connective tissue, develops simultaneously with the enamel cap. The latter completely envelops the papilla like a double-

Fig. 2 (Case 1).—Outline of cyst with permanent cuspid in lower part of cavity standing in perpendicular position. Note the buccolingual diameter. The entire bony wall surrounding the cyst was a thin layer of cortical bone.

walled hood. The dentin, cementum and tooth pulp are developed from the papilla. The enamel organ and papilla are completely encircled by a tooth sac. These three form the tooth follicle.

The point of special interest in this connection is that some of the epithelial cells in the enamel organ cease to function. It is from these arrested cells that one source of the paradental epithelial débris of Malassez may originate.

Malassez thought that these epithelial cell rests may originate from: (1) the source just mentioned; (2) some other portion of the epithelial cord; (3) the mucus membrane of the fetal jaw. Malassez was the first investigator to call attention to these epithelial rests and to suggest the manner in which cysts and other pathologic growths of the jaw may originate from them.

The Arthur Hopewell-Smith[2] theory is that "an excessive secretion of fluid takes place between the enamel, or Nasmyth's membrane, and the follicle, which, accumulating, distends the space and produces a cyst."

Other theories of the pathogenesis of these cysts are the Magitot periostic-inflammation theory, the Sarren foreign-body-encystic theory and the Albarran and Dequidt theories. The two latter are but modifications of the Malassez, Magitot or Sarran theories.

Referring again to the classification of odontomas, it will be seen that there are virtually but two types of jaw cysts in this list, (1) the root or periosteal and (2) the follicular or dentigerous cyst. The other kinds of cysts in this classification are modifications and complications of these two primary types.

2. Hopewell-Smith, Arthur: Histology and Pathohistology of the Teeth and Associated Parts, Philadelphia, P. Blakiston's Son & Co., 1903.

The periosteal or root cyst usually follows disease or injury of the tooth or teeth involved. The dentigerous cyst is apparently not primarily associated with disease or injury. In the latter the tooth follicle becomes filled with fluid, expands and fails to erupt. This progresses slowly, causing both absorption and expansion with new growth of the surrounding tissues. The spongiosa and contiguous tooth-roots yield by absorption and displacement, while the cortex is modified mainly by expansion and new growth. Thus, the cortex is usually sufficiently thick in a mandibular cyst to prevent pathologic fracture, although the expansion may be very considerable.

In the majority of cysts reported, the patients have been operated on between the ages of 20 and 30. Cases have been reported, however, connected with deciduous teeth, as early as 9, and others connected with third molar teeth, as late in life as 65.

Primarily, the cystic fluid is probably sterile, but it may become infected by injury or surrounding disease. Destruction of the pulp of a contiguous tooth as result of radicular absorption from pressure of the growing cyst, or from caries, injury or other causes, may be the source of surrounding infection to invade and complicate the cyst.

In the primary uncomplicated condition, the cyst is usually of slow growth, noninflammatory and not painful. The mucosa and integument remain intact and retain normal color. The cyst may, however, become inflamed, painful or malignant. The latter is an exceptional complication to develop, and may take the form of an adamantive epithelioma, a carcinoma or a sarcoma; most commonly the first mentioned, and the next in frequency the carcinoma.

The position of the teeth in the cyst is variable. When one tooth is involved, it is commonly well developed and perpendicular, or nearly so, with the crown presenting more or less in the direction of the contiguous teeth. Impacted teeth, especially upper cuspids

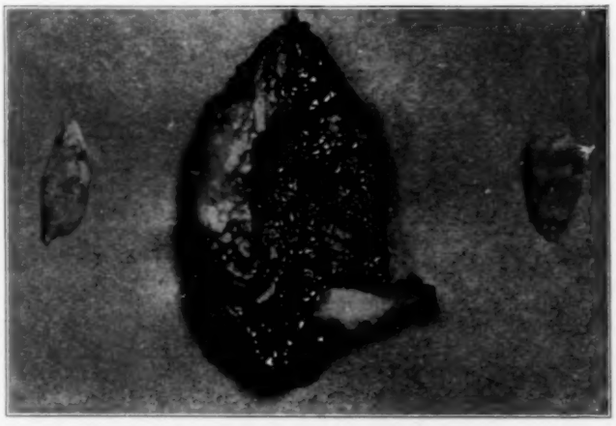

Fig. 3 (Case 1).—Cyst with lower cuspid pulled out of the sac but adhering to its wall. Cystic membrane is attached near the apex of the cuspid. The teeth on either side of the cyst show marked apical absorption.

and lower third molars, may, however, lie in any position in which they may be found under other conditions. When several teeth are involved in the growth they are more frequently irregular in position and in development. In some cases, only irregularly formed pieces of tooth material appear. Moreover, some cases have been reported in which no evidence of a tooth-like object could be found. Scudder contends that a

true follicular cyst may not necessarily contain a tooth, especially if the growth of the cyst begins very early in relation to the development of the tooth involved.

PERIOD OF GROWTH AND SIZE

It would appear that the growth may continue indefinitely were it not terminated by operative interference or death of the host. Some cysts have been reported the size of a filbert, while others were the size of a grapefruit. The rapidity and the length of the period of growth, before operative interference, appear to determine its size.

PATHOLOGY

The cyst may be single or multiple; most frequently it is single. The sac is composed of a thick wall of connective tissue, irregular in outline, which may or may not be calcified. In examining the lining of these cysts, it is natural to expect to find it composed of epithelial cells because of their protective function. However, in practical experience some cysts are found to be lined with connective tissue cells. This may be partly accounted for in the destruction or loss of the delicate epithelial lining in making and staining the microscopic specimens. Uninfected cysts may contain a more or less clear or gelatinous fluid with or without evidence of a fatty degenerative process. In infected cysts the fluid is a turbid sanguinolent or purulent material, with numerous bacteria and inflammatory products.

DIAGNOSIS

A good history, followed by thorough clinical and roentgen-ray examination, will usually clear up the diagnosis. A more or less slow growing and hard tumor with little or no pain, associated with an unerupted tooth, and especially when located in the mandible, is suggestive of a follicular cyst. Rarely, evidence of a tooth or teeth may not be discovered in the roentgen-ray examination. A toothless cyst should be differentiated from a root-cyst. The history, or a careful test for pulp vitality, may clear this question. However, the history of prior extraction of particular teeth, and especially of the previous pathology of these teeth, is very unreliable. It is quite probable, therefore, that some of the so-called toothless cysts which have been reported were in reality root-cysts from which the diseased teeth were previously extracted. A dentigerous cyst in the antrum may be difficult to differentiate from a root-cyst or from a chronic antrum infection. However, surgical experience indicates that a cyst in the antrum is most frequently a root-cyst. Moreover, operative procedure would be quite similar in either case, and prior diagnosis, although desirable, would not be a necessity. In case of a painful and inflammatory cyst, a critical examination of the surroundings for diseased teeth, as well as an analysis of the history of recent accident, should be made to determine the cause. Rapid growth, pain and inflammation which cannot be explained by injury or localized infection is strongly suggestive of malignancy. An exploratory operation is indicated in all cases of suspected malignancy for macroscopic and microscopic examination and final diagnosis. In case no malignancy or localized cause is found to explain the existence of the pain, a search for a remote cause should be made to aid in clearing the diagnosis prior to removal of the cyst.

TREATMENT

Preoperative.—The usual physical examination to determine the operative risk is a wise expedient. Removal of all diseased teeth, a general improvement in mouth hygiene, and in some cases the removal of the tonsils, are indicated.

Operative.—In the majority of cases the Partsch method of enucleation, with slight modifications, is the operation of choice. I have adopted the plan, whenever practical, of approaching the cyst through an opening made within the mouth. A window is cut through the soft and hard tissues at a point and of a sufficient size to give the necessary access to all recesses of the cystic cavity. The sac is carefully shelled out or separated from all of the surrounding structures and removed. After the hemorrhage has been arrested, the housing place of the cyst is carefully dried and examined. A small electric lamp is inserted into the cavity to facilitate in making this examination. The relative thickness of the remaining bridge of bone may thus be observed, and the probability of pathologic fracture estimated. The interior is also examined to locate important nerves and blood vessels, that they may be safeguarded against unnecessary injury. Moreover,

Fig. 4 (Case 1).—Appearance of bone, two and one-half years after removal of cyst. Observe the amount of new growth and solidity of bone filling former cystic cavity. The deformity had disappeared almost completely, and this was effected spontaneously.

examination is made to locate loose fragments of bone, pieces of cystic membrane and projecting roots of contiguous teeth, all of which are removed. The cavity is again thoroughly dried and cauterized, 95 per cent. phenol (carbolic acid) or 50 per cent. silver nitrate being used. After applying the antidote for caustic used and again drying, the cavity is packed with gauze saturated with petrolatum, or equal parts of guaiacol, balsam of Peru and perolatum.

The deformity, resulting from the expansion of the bony cortex during the growth of the cyst, usually disappears spontaneously, in from a few months to a few years.

In large cysts where no bridge of healthy bone remains, when the cyst is large and multilocular with considerable new growth of osseous tissue, and in malignancy, resection may be justifiable.

Postoperative.—Some cysts will require repeated recauterization and repacking, while others will require very little attention, except to keep them clean. Roentgen ray or radium is not a necessary postoperative treatment, except in malignancy.

REPORT OF CASES

CASE 1.—Mrs. R. K., aged 27, whose family and personal history were negative, complained, May 11, 1917, of a large swelling in the region of the lower left cuspid. The growth was first observed six years previously. I found that the lower left cuspid and first bicuspid were missing. This space was spanned with a bridge, the abutments of which were loose. The patient stated that the first bicuspid had been extracted, but that the permanent cuspid had not. The tumor was about the size of an English walnut. It was very hard and had never caused any pain. It extended well into the floor of the mouth, interfering with speech and buccally enough to attract attention at a considerable distance.

I made a clinical examination and tentative diagnosis of a follicular cyst. Roentgen-ray examination confirmed this diagnosis and demonstrated a fully developed cuspid in the lower anterior portion of the cyst.

I operated and removed it, June 26, under ether anesthesia. A large window was cut through the bucco-occlusal aspect of the cystic wall, and the sac punctured to facilitate its removal. The fluid was clear, amber colored and did not yield a culture. The cystic sac was about one-eighth inch (3 mm.) thick in the lower portion around the cuspid apex where it was attached to the tooth. The upper part of the wall was much thinner, but tough. Following the removal of the cyst, an examination was made which elicited the apexes of the lateral incisor and second bicuspid projecting into the cavity. These were partly absorbed and therefore were extracted. The cystic housing was generally rounding, but with numerous small superficial surface depressions and irregularities. Nothing but the cortical layer of the bone appeared to span the tumor.

The specimens were three teeth and a cystic membrane. The cyst was demonstrated to be attached to the root of the cuspid near the apex and enveloping the remainder of the tooth. The cyst was of the unilocular type.

Fig. 5 (Case 2).—Appearance of multilocular dentigerous cyst before operation. Two bicuspids in cystic cavity; lobular extension of growth to a point posterior to the second molar.

Microscopic examination revealed an epithelial lining.

The slight reaction in temperature following the operation was remarkable, although the lingual glands and the face were swollen considerably. The highest temperature reached was 98.8.

In two and one-half years the deformity had completely disappeared and the cavity was refilled with new osseous material.

CASE 2.—Mr. E. S., aged 22, whose family and personal history were negative, complained of a painful swelling in the right mandible in the region of the bicuspids. These premolars were unerupted. The first molar had no cavity, but was loose and tender on percussion. The periosteum was elevated and the soft tissues were slightly swollen on the buccal aspect, while the lingual side was normal.

Fig. 6 (Case 2).—Appearance two and one-half months after operation. The deformity in this case was slight and had completely disappeared spontaneously in three months.

A clinical diagnosis of an infected dentigerous cyst was made. Roentgen-ray examination confirmed this diagnosis and brought to light the further fact that it was of the multilocular type. The cyst extended from the cuspid to the second molar and had expanded slightly in a buccal direction.

I operated and removed it under ether anesthesia, Sept. 13, 1919. On the morning of the operation the gum and periosteum on the buccal surface as well as the cheek were moderately swollen and reddened. A large window was cut through the soft and hard tissues on the buccal side of the cyst extending from the cuspid to the second molar and apicogingivally; it was made sufficiently large to give a complete exposure of the unerupted teeth and diseased material. The abscessed first molar was extracted. The two bicuspids, which were of normal size and shape, were dislodged and, together with the cystic membrane and a large amount of necrotic material in the molar region, removed.

The tissue specimens were the first molar, the roots of which were absorbed, a large amount of soft, necrotic bone, and a multilocular cystic membrane. Microscopic examination of the membrane demonstrated a lining of connective tissue cells. No evidence of malignancy was found.

The reaction from this operation was quite pronounced, but of short duration. Very little postoperative treatment was necessary, and very little fluid oozed into the cystic cavity to cause annoyance. Recovery with complete healing of the cavity took place in two months.

First Wisconsin National Bank Building.

Future of the Race Affected by Woman in Industry.—Now that women are claiming to compete with men in industry on equal terms, surplus womanhood is creating fresh problems. If it is through increased production that the empire is to be saved and its industrial supremacy maintained, these can only be secured by the country possessing a race of strong and healthy workers of both sexes, and by plenty of them. A large percentage of women will never marry. The future of the unmarried women of the working classes is a matter for serious consideration. Occupation will have to be found for the increased number of single women. The field of labor for women will have to be generally extended. Possibly some alleviation would follow the allocation of the particular trades to the sex better fitted for them, but this could only be arranged by experience and by physical examination, also by the study of fatigue, and the general effect of work from the health point of view.—T. Oliver, *J. State M.* **29**:324 (Nov.) 1921.

MANDIBULAR TUMORS*

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If we consider various kinds of dental cysts under the classification of mandibular tumors, there will be noted a relative infrequency of malignancy; and it is probable that the majority of the malignant tumors are not so in their early growth. More than in any other place in the body, the study of the etiology of tumors in the mouth has confirmed the chronic irritation theory—traumatic or bacterial. The normal tissue cells of the oral cavity possess an unusual degree of physiologic reproduction, as evinced by the regenerative power of the gum tissue, and by the healing of the other tissues with a minimum amount of cicatricial formation. Most of the tumors of the oral region can be traced to some continued bacterial or traumatic irritation. Cancer of the cheek is usually directly traceable to rough or irregular teeth. The epulis develops at the site of an extraction. The lesions, once developed, are usually subjected to a continued chronic irritation; and this may give some reason for the malignant changes which occur in the early benign types.

It is to be noted that, when the malignancy occurs, it is frequently of the rapidly growing type, excepting in the epulides and some of the giant cell sarcomas. Various reasons are advanced for this rapidity of growth; but there must yet remain some doubt as to the true reason. It is not improbable to assume that neoplastic reactions in normal tissue are not dissimilar, from a pathologic standpoint, to an inflammatory reaction, so far as the normal reaction of the fibrous tissue cells endeavors to arrest the abnormal cell proliferation, on the one hand, as it does the bacterial proliferation, on the other hand. The result may vary somewhat in accordance with the relative powers of the two processes. It is not unreasonable to assume that the

Fig. 1.—Suppuration at root of molar: drainage by removal of portion of external alveolar plate with resultant preservation of tooth.

Fig. 2.—Same condition as in Figure 1: patient treated in similar manner with equally good result.

benign tumor is thoroughly encapsulated, not alone because of its own special type of cell, but also because of the relatively greater ability of the normal physiologic process to throw out a successful capsulation. The slow growing scirrhous carcinoma is recognized as such because of the large amount of fibrous tissue, rather than because of a special type of carcinoma cell. The giant cell sarcoma probably represents a fibrous inhibition of rapid karyokinesis over the small, round cell sarcoma. The theory would perhaps be more applicable to the primary neoplastic lesions than to the metastatic lesions, as it is probable that, when a so-called "strain" in the malignancy cell is developed, it carries its proclivities to other parts, with the body in a state of lessened "resistance."

We have all learned to respect the virulence of the small, round cell sarcoma and the carcinoma when once established in the mandible. The ultimate mortality of such cases has been appalling. These tumors, frequently benign at first, are not often subjected to an early consideration by a competent oral surgeon, and it is probable that the early malignant life may be of short duration. Early radical treatment is at times delayed by a desire to avoid disfigurement.

The type of tumor called epulis, while essentially malignant, is governed by restrictions which make it amenable to surgical treatment. It is unfortunate that not all malignancies are subject to the restrictions, during their early growth, which govern the epulis tumor. Pathologically, it is not infrequently confused with the giant cell sarcoma. The growth is exceedingly slow, and it spreads only by continuity of tissue. It should, when diagnosed early and when properly treated, always yield a cure. It is noted by clinical observation that with each recurrence its virulence increases, and a successful eradication is rendered more diffcult. Its location of origin always points to a cause of chronic irritation. Early treatment of epulis growths occurs as a rule in the dental chair, and the oral surgeon usually sees them after a second or third ineffectual removal. It is here as well as in the other malignancies that the heat treatment has a potential influence—either alone or in connection with a surgical excision.

Fig. 3.—Bone cyst at root of incisors: incision made and part of external alveolar plate removed with preservation of teeth.

The epulides can distinctly be classified as oral lesions, and their early characteristics should be more thoroughly taught to dental students. The appearance of an epulis is generally antedated by the removal of the diseased tooth. The growth at first has all the appearance of an innocent excrescence protruding through the aperture in the gum formerly occupied by a tooth.

The base may spring from the fibrous tissue, or it may spring from the myeloid tissue inside the aveolar process. The possessor of an epulis usually returns to the dentist who extracted the tooth, and he in turn with ease and facility clips off the growth. This may be done a second or third time within the succeeding months. During this period the virulence of the neoplasm apparently increases, and the oral surgeon, when consulted, finds it necessary to pursue a rather radical procedure.

The proclivity of the epulis for extension by continuity of tissue only is well demonstrated by one case which ultimately came to the clinic of the North Pacific College. During the preceding six months, this man had had successive dental procedures without a microscopic diagnosis. The teeth on one side were gradually removed, the antrum was being irrigated, and the entire submucous space of the hard palate was being cleansed of pus and successively loosened pieces of necrosed bone. A radical removal of the superior maxillary on this side gave an apparent cure for several

* Read before the Section on Stomatology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

months. Excision and heat were used jointly. Local recurrence necessitated the removal of the nasal bones, the lateral walls of the orbital cavity and the eyeball, resulting in a temporary cure. Some months later, a local recurrence necessitated the removal of the malar bone and contiguous tissues. The virulence was so well established, however, that death ensued about four months later from extensive local recurrence. No metastasis at any time occurred, and never was there any glandular involvement of the cervical lymphatics.

It is noted that few dentists send to a pathologic laboratory excrescences which they remove from the oral cavity. Every excrescence represents an abnormal cell proliferation, which places it in the classification of the neoplasms. In the teaching of dental students, the importance of this point should be thoroughly impressed on the mind of each graduate.

It has been interesting to note the various diagnoses which come back from different pathologists whose opinion is sought on an epulis section. Those who have examined a number of specimens, however, and have had the advantage of knowing the clinical course of these cases, will not send back a report of a benign fibrous tumor of no definite characteristics, or the diagnosis of giant cell sarcoma. The giant cells are frequently in the sections, but the picture is characteristic to the experienced eye.

Despite the confusing pathologic picture, the epulis must be considered as essentially malignant, belonging to the mesoblastic type of neoplasms, just as much so as the so-called rodent ulcer is a similar type of malignancy of epiblastic structure.

The general tumors, both benign and malignant, which affect the mandible are so thoroughly understood (pursuing a similar course in other parts of the body) that it is not logical to impose on this meeting a summary of this part of our subject. The treatment of these tumors is so well standardized, and the principles so thoroughly understood, that it is hardly logical to give any consideration to these principles, excepting so

Fig. 4.—Large cyst at base of bridge support: cyst and lining shelled out with preservation of support.

Fig. 5.—Cyst at root of incisors: similar operation as in Figure 4, with preservation of all four teeth.

far as especially to emphasize the importance of early radical treatment of malignant types when they are in the mandible. We must recognize the well known virulence when here situated, and the early metastasis which takes place in a region well supplied with lymphatics.

The malignancy of the fundus of the uterus remains a local lesion for a greater length of time than when it occurs in the cervix. It is a general rule that metastasis occurs earlier from any malignancy at the outlet of the urinary bladder or the gallbladder than from the fundus. Apparently, in the oral cavity there is no fundus nor outlet to consider; and early metastasis finds a limitation only when the type of malignancy is of the slow growing type. Tumors of the mandible can usually be noted early in their existence on account of the superficial location of the bone; whereas in the abdominal cavity, or in some deeply situated bone as the femur, a tumor must attain some proportion before attention is directed to it, and in case the tumor is of a malignant nature, the possibility of an early eradication is lost. It is probable that the high percentage of cures of cancer of the lip depends

Fig. 6.—Osteoma: conservative operation without sacrifice of teeth.

more on this fact than on the fact that malignancy is less virulent in the lip than elsewhere. The use of heat and radium has apparently increased the percentage of cures of malignancies of the mandible, as evidenced by the experience of Ochsner, New and others; and our own observations have been in accord with this fact. Probably when the technic is more standardized by a longer experience, we shall note that the results are even better.

DENTAL CYSTS

Of especial interest in connection with mandibular tumors are dental cysts. These are of two general types: (1) those which arise from some embryonal rests, and (2) those which have an origin from a preceding infection. The first type reproduces a type of tissue analogous to some true dental tissue. The second type develops a type of cyst containing fluid or tissue usually encapsulated and not resembling any type of dental tissue. A growth of the second class of cysts is usually more progressive, and gradually involves and destroys a larger amount of mandibular structure. Study of the inflammatory cysts is rather illuminating on the pathogenesis of tumors in general. The primary infection at the root of the tooth soon becomes historical. The proliferation of the granulomatous tissue is kept pace with by the epithelial proliferation, which at once surrounds and penetrates the granuloma. If apical tooth infection can produce a neoplastic process, is it not logical to assume that the stomach ulcer, the ulceration of an old cervical laceration, or the bacterial or traumatic irritation of any tissue will stimulate a cellular proliferation that will go beyond the limits of normal physiologic repair and become neoplastic?

It is especially desired to discuss the inflammatory dental cysts from a standpoint of treatment in reference to the conservation of teeth. There are many cases in which this type of dental cyst, while originating from a tooth infection, does not in any wise

involve the tooth after the primary infection becomes historical, and the proliferating cyst has formed.

On account of the relative density of the bone, these cysts usually impinge on the outer surface of the mandible, and are more readily accessible to surgical drainage. Many of these cysts can be opened up and their contents removed, as well as the capsule and the area packed and healed, without sacrificing any of the teeth. In this type of case, we are dealing with a neoplastic disease which stands out by itself, having been stimulated to growth by the original apical infection. This apical infection in such cases is healed and cured; if not, the tooth would have presented the characteristics of the so-called ulcerated tooth.

The application of this principle is analogous to general surgical treatment of bone cysts and bone infections elsewhere. This idea is advanced with a full realization that strenuous criticism will be provoked. Nevertheless, clinical application of this principle during the last few years has yielded results that have been equally as satisfactory as any other line of treatment, and at the same time has resulted in the conservation of many teeth

The general surgical principles of bone infection have not been fully applied to the treatment of mandibular cysts and mandibular infections, especially those originating in dental lesions. It is desired to advance the idea that the first thought in such situations should not be a necessity to resort to promiscuous extractions.

The area from which a dental cyst or a granuloma has been removed is filled up by normal cicatricial tissue, either fibrous or osseous. When bone cysts are removed from any of the long bones, we find this basic principle very dependable. When either of these processes occurs in the mandible, there may be exposed, on removal of the diseased area, some part of a tooth, otherwise solid and painless. The fact of this temporary exposure should not always condemn a tooth and warrant its extraction. The tooth is at this time not a part of the process but simply a contiguous neighbor, so to speak. The new tissue which forms, fibrous or osseous, will frequently form an adequate protection. The infection which once existed there and originally started neoplastic process is historical. An uninfected, solid, devitalized tooth can serve a useful purpose, and is not necessarily a menace. In several cases of this particular condition there was temporary exposure. The healing in the area furnished an adequate protection for these particular teeth; and since then they have been firm, solid and useful. In two cases of cysts which produced a sinus instead of continuing to increase in size, the treatment was satisfactory and the teeth were conserved.

Postgraduate Study.—When one has a fragmentary knowledge of new things it is easy for the conscientious man to hand over his problem to another and accept the decision even when it runs counter to his mossy grounded convictions. From this point, the descent is easy to the habit of transferring all his problems to other agencies. The only corrective for this is a wider adoption of postgraduate study as a custom of our profession. This may be through the activities of county societies properly organized, through subcommittees of the local profession, or through travel and attendance at a suitable graduate school or a general hospital where facilities are granted. No one of these agencies alone will suffice, for the need is great and extensive.—A Stengel, *Virginia M. Monthly* **48**:439 (Nov.) 1921.

ETIOLOGY, PATHOLOGY AND TREATMENT OF CYSTS OF THE JAWS*

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The particular reasons for this paper are, first, that cysts of the jaws are not widely known among general surgeons, and, second, that there are certain interesting etiologic factors which I desire to mention.

There are many classifications of cysts and many names given to them; but the simple classification into radicular cysts, follicular cysts and multilocular cysts, which fulfils the pathologic anatomic requirements, is the one I shall use.

It is difficult to estimate the frequency of these cysts. From the medical literature, one would think they are comparatively rare. This is not true, however. They are rather common, if one is on the lookout for them, particularly if one has the teeth roentgenographed, as this is the usual method of detecting them. After a rather careful survey of the literature and from my own records. I find that they occur in about the proportion of: radicular, 80 per cent.; follicular, 20 per cent., and multilocular, 1 in 2 to 3,000.

ETIOLOGY

Radicular cysts occur most commonly between the ages of 20 and 30. They are occasionally seen in milk or first teeth; but this occurrence is so exceptional that I shall disregard it. It is essential for the development of a radicular cyst that one has death of the pulp with subsequent development of a granuloma, this granuloma developing into the cyst. There have been a great many theories and academic discussions as to the origin of the cyst, but the consensus of opinion is that the cyst develops from the epithelial sheath of Hertwig (débris epithéliaux de Malassez). It is essential to understand that this is always a chronic process. The pathologic sequence for the development of the condition is: (1) death of the pulp; (2) development of a granuloma, and (3) bacterial or other toxins. Irritation of these so-called epithelial rest cells in this sheath of Hertwig stimulates them to an overgrowth, which goes on until the lining becomes epitheliated.

These rest cells take on a bell shaped formation, and from them a mucoid degeneration occurs and produces the gelatinous fluid found in these cysts. This process is very gradual. If this process, after the death of the pulp takes place, is very rapid and the tissues do not overcome the infection, we have developed an acute abscess which I want to insist is an entirely separate and distinct condition. The position of the development of these cysts is interesting and led me to study these conditions to see if their location had any particular significance as to their etiology. These cysts develop more commonly in the maxilla than in the mandible. It is the upper lateral incisors that are most commonly affected, next the canines, third, the lower central incisors, and finally the upper molars. The point I wish to draw, and which is entirely new as far as I can find in the literature, is that the lateral incisor and the canine are situated where the intermaxillary process fuses with the maxillary process. I do not know whether this had anything to do with the cysts' being more frequent in this position;

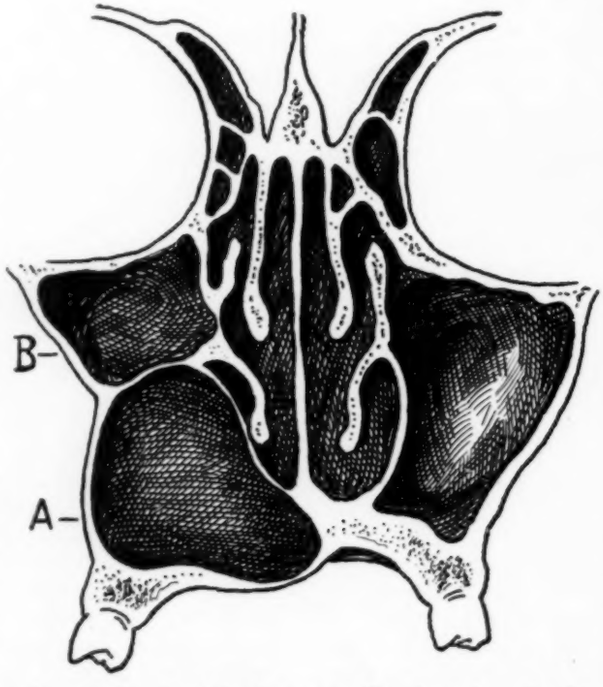
* Read before the Section on Stomatology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

also, in the mandible they occur most frequently where the two processes join, that is, the central incisors. I was unable to prove this point. It does not seem to fit in with the cysts which develop in the other teeth. However, it may have some bearing on the frequency of the location of the cyst. If, for any reason in the occlusion of the teeth, one tooth strikes its opponent before the remainder, it seems to be a factor tending to produce a cyst. Regulating the teeth (orthodontia) is not sufficiently practiced for one to be sure whether or not this has any bearing on the subject. I have not been able to assure myself that this has any significance.

The development of this radicular cyst, then, is death of the pulp, and gradual development of a granuloma due to irritation, with development of a cyst which, in turn, causes absorption and distortion of the surrounding bone structure.

Follicular cysts develop from the enamel sac which surrounds an unerupted, supernumerary or abnormal tooth which takes on a hypertrophy and proliferation at the time at which the tooth should be erupted. For instance, the canine cyst starts emptying in the ninth year, the cyst of the third molar at approximately the eighteenth or twentieth year. It is more common in the maxillary canine, because this is the one most frequently displaced. It displaces the bones in which it is situated the same as any other cyst.

Multilocular cysts are seldom seen except in the ramus of the mandible. A multiplicity of names has been given to them, from the name of epithelial odontomas (Sutton) to the term proliferating follicular cystomas. They are developed from the posterior extremity of the enamel ridge. The pathology is very much confused. My opinion is that these are nonmalignant cysts having many cavities, some communicating and some not. To explain the malignancy that occasionally occurs in these cysts, I think it is only the usual amount of malignancy that occurs in any abnormal slow growing tissue that develops from misplaced epithelium. They develop between the ages of 20 and 30 years, as 20 is the time that the portion of the enamel ridge immediately preceding this portion forms the lower third molar.



A, cyst cavity; *B*, displaced antrum. Note depression of palate and elevation and lateral compression of lateral wall and floor of the nose.

DIFFERENTIAL DIAGNOSIS

Cysts in general must be diagnosed from very few other conditions. In their early stage they are practically all at first recognized by the roentgen ray. First, it must be differentiated from suppuration of the antrum and a condition called hydrops of the antrum or a cystic degeneration of the antrum, which I have never seen, and from various tumors, such as osteoma and sarcoma. On account of the early age at which cysts are noted, carcinoma is usually not present.

The difference from disease of the antrum is first a difference in the history, a discoloration or absence of a tooth point to a cyst. The roentgen ray materially assists in the diagnosis. Second, the cyst is usually more anterior on the alveolar margin than a distended antrum would be. Third, the almost pathognomonic sign of cyst disease is the crackling feel of a ping pong ball—former writers called it parchment-like.

Transillumination has been of very little value. A needle puncture, under local anesthesia, will almost always clear up the diagnosis. The symptoms of a cyst are: If small, they are usually first discovered accidentally by a roentgenogram. The patient first notices a slight swelling, which grows very gradually without pain in all but the multilocular variety. It is observed most commonly above the lateral incisor and canine in the alveolar margin, but again may first show itself by a swelling or enlargement in the hard palate. The physical signs early consist in a bony enlargement, later followed by the ping pong crackling on palpation, with the elevation of the floor of the nose of the side affected, if the cyst is in that area.

TREATMENT OF RADICULAR CYSTS

If the cysts are small and are seen early, a small incision is made through the alveolar mucous membrane, and the outer table of bone is trephined or chiseled away. The root of the tooth is amputated, and the cyst lining is separated from the surrounding bony margin by a twisting motion. The entire sac of the cyst is removed. A small amount of iodoform is dusted in. The cavity is allowed to fill in with a blood clot; the mucous membrane is sutured in place. It is taken for granted that the root has been filled. At times, it may be necessary to extract the tooth which is the cause of the cyst. At times, these cysts remain after a tooth has been extracted, but this is rare. If the cyst is larger than an agate, depending a good deal on the size and the distention that have been produced, other methods may be indicated, such as the method popularized by Partsch, which consists in removing the alveolar margin overlying the cyst and without attempting to remove the membrane, pack, etc., with iodoform gauze so as to make the cyst cavity an accessory cavity to the mouth. The essential part here is to make the opening large enough and, of course, either extract the tooth or have the root amputated and the canal filled. There are cases in which it is possible to make the cyst cavity an accessory cavity to the nose by removing the nasal wall of the cyst, which in reality is the outer wall of the inferior meatus, the same as one would do in a Caldwell-Luc

operation. As suggested by Richter and Waldron, independent of each other, you would first do a Partsch operation and then, at the same sitting, remove the portion of bone between the cyst and the inferior meatus and have the packing come out through the nose. I have found it much more satisfactory to perform an operation patterned after the Denker operation, which consists in removing the anterior wall of the cyst and the portion of the wall between it and the nose—a Denker operation in reality.

DIFFERENTIAL DIAGNOSIS OF THE VARIOUS CYSTS

Radicular	Follicular	Multilocular
Ages: 20 to 30	Ages: 12 to 20	Ages: 25 to 35
Condition of teeth: Usually a dead tooth	Absent tooth	Normal
Most common: Upper jaw at apex of lateral incisor	Upper jaw at apex of lateral incisor	Mandible
Roentgen ray: Rarefication at apex of tooth	Unerupted tooth	
No pain	No pain	Pain
No elevation of temperature	No elvation of temperature	No elevation of temperature

The disadvantage of the nasal method is that one frequently sees a large amount of crustations collect in the cavity. I would especially warn against opening these cysts through the roof of the mouth, as it necessitates wearing a plate, etc. It is interesting to note that after opening a cyst the portion of the palate bone which has been involved and thinned by the distention of the cyst returns to its normal contour, and bone is again deposited.

An almost complete bibliography of the foreign literature can be obtained from the reprint of Dr. Erich Becker.

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REPORT OF A CASE OF CEPHALIC CHANCROID

AND A CASE OF ENCEPHALITIS FOLLOWING EXTRACTION OF A TOOTH THAT HAD INFECTION AT APEX *

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Extragenital chancroids are by no means rare, but are far less frequent than extragenital chancres.[1] Those on the fingers and hands are occasionally observed, but few cases of cephalic chancroids have been described.[2] This is not surprising, for conditions about the face and head are not advantageous for the successful inoculation with the Ducrey streptobacillus.

Chancroids, other than those of the penis, have been reported on many different portions of the body, upper and lower extremities, abdomen, lips, eyes and buccal cavity, but in all reports of series, digital chancroids are by far the most frequent.[3] It is necessary that there be an atrium through the skin for the entrance of the bacillus, and this requisite is most often present extragenitally on the fingers, as the hands most often come in contact with the initial ulcer.

Not all extragenital chancroids are the result of autoinoculation. The handling of another's infected parts is often the cause of digital chancroids, especially in physicians, and the use of a soiled handkerchief [4] was proved in at least one case to have been the etiologic factor.

CHANCROID OF CHIN

The following is the report of a recent case of an extragenital chancroid occurring on the chin, with a definite submental adenitis or bubo:

J. S., a negro, aged 23, entered Cook County Hospital, Oct. 12, 1920, because of a painful swelling beneath the chin. He did not seem to be acutely ill, and was of good nutrition and stature. Regional examination revealed that his scalp, ears, eyes and nose were negative. His mouth was in poor condition. The lower left bicuspids and first molar were carious to such an extent that the viability of their pulps was lost. The mucosa of his mouth was normal, as were his tongue and throat. Examination of his face revealed a small pustular lesion less than 0.5 cm. in diameter on his chin just to the left of the median line. When questioned as to this lesion, he said that he had noticed for the last two or three days a small pimple in this region but had paid no attention to it, but admitted that he thought it was increasing in size. Beneath the chin there was a round, movable tumor, rather deeply situated below the symphysis, about the size of a crabapple. This mass was very sensitive to touch, was firm, and did not fluctuate. The chest, abdomen and reflexes were normal. A search for adenopathy revealed some small, hard bilateral inguinal glands. An examination of the genitalia revealed an ulcerated lesion with ragged edges, somewhat elevated, but not indurated, on the right dorsal surface of the coronal sulcus. This ulcer was nearly round, about 1.5 cm. in diameter, and was of about two weeks' duration.

Laboratory examination revealed 5,280,000 red and 11,000 white blood cells with a hemoglobin content of 95 per cent. The urine was negative. A smear from the genital lesion, under the dark field illuminator, revealed no spirochetes. Stained with carbolfuchsin, the coccal forms were so profuse that no bacterial differentiation could be made. The blood Wassermann test was negative.

As a result of the examination a diagnosis of genital chancroidal infection together with a submental adenitis, either from a facial or an intra-oral infection, was made, although it was recognized that normally the affected teeth did not drain into the submental region. Appropriate chancroidal treatment was instituted, and hot dressings were applied beneath the chin.

Five days after entrance, fluctuation was thought to be demonstrable below the chin, and an attempt was made to aspirate the gland, but was unsuccessful.

During this time the lesion on the chin became larger and encrusted. When the crust was removed, a ragged ulcer about 1 cm. in diameter resulted, looking not unlike the chancroidal infection on the penis.

Ten days after entrance, the gland beneath the chin was opened and curetted, the result being an abundance of thick caseous material. On account of the rapid liquefaction of the gland, and its painful character and the similarity between the lesions, a tentative diagnosis of chancroid of the chin was made.

A culture of this material was made by Dr. D. J. Davis [5] of the University of Illinois Medical School, who reported:

"The content of the abscess was examined bacteriologically. It contained many pus cells, necrotic tissue, and much blood. In stained smear preparations no bacteria were found even on careful search.

"Suspecting the presence of *B. ducreyi*, the material was cultivated in blood. For this purpose six small tubes containing about 2 c.c. of fresh human, defibrinated blood were prepared and each inoculated with diminishing amounts of the material. Heavy blood agar tubes were examined, and in three of the six growths *B. ducreyi* appeared. A few *Staphylococci albi* grew in two or three of the tubes, but not in all. It was impossible to state whether or not they were contaminators or secondary invaders; probably the former, since they were not found in all the tubes.

* Read before the Section on Stomatology at the Seventy-Second Annual Session of the American Medical Association, Boston, June, 1921.

1. White and Martin: Venereal Diseases.
2. Martin, in Morrow's System.
3. Shelmire: Texas State J. Med., 1913-1914, p. 318.
4. Klausner: J. Cutan. Dis., 1915.
5. Davis: Jour. M. Res. 9: 401, 1893.

"The bacilli after twenty-four to forty-eight hours' growth appeared in typical tangled clusters of streptobacilli. Many also appeared in short and long chains. On superficial examination, morphologically they resemble growths of *Streptococcus viridans*. They are short, oval bacilli, stain with difficulty with methylene blue, and are gram negative. On solid mediums they form small, gray, opaque colonies from 1 to 2 mm. across, which appear in twenty-four hours and grow to maturity in two days. On plain mediums they gave no growth."

Argyrol crystals[6] applied to the lesion, and cleanliness, led to a speedy recovery.[7]

That the Ducrey bacillus is the specific cause of chancroid there can be no doubt. Ducrey in 1889 made fifteen successive human inoculations with material from the lesion, finally obtaining a lesion in which practically only the streptobacilli were seen. He did not then know how to grow it. This was done by Lenglet in 1898, who cultivated it in human skin agar covered with blood. Heavy blood mediums or pure blood, defibrinated or not, have now come into general use in growing it. At least three workers, Fisher, Lipschütz and Tomasczewski, have inoculated themselves with pure cultures and caused typical chancroids. Monkeys are susceptible; also the cornea of the rabbit.

Extragenital chancroids are not uncommon on the lower part of the body, but are rare about the head and face. In Kolle Wassermann's *Handbuch*, Stein quotes Petersen as having observed twenty-seven extragenital lesions in a series of 9,000 chancroids. Ullman collected from the literature and his own experience sixty-four extragenital chancroids. Of these, forty-nine had both genital and extragenital lesions (as in the case here reported); twenty-two were on the fingers. Of chancroids in other localities, one is reported on the gum of the upper jaw, two on the conjunctiva, one on the tonsil, one on the tongue, one on the soft palate and wall of the pharynx, and one in the external auditory canal. None was found reported on the chin.

CONCLUSIONS

This patient had primarily a genital chancroid, and carried the infected material from his genital lesion, implanting it upon his chin, where it produced a typical lesion with the characteristic painful regional bubo with early liquefaction.

ENCEPHALITIS FOLLOWING EXTRACTION OF TOOTH

My object in reporting this case is to call attention to some of the dangers that may attend the extraction of a tooth, and to deprecate the too frequently adopted method of multiple extraction of teeth at one sitting.

The extraction of a tooth is just as important and should entail just as much care in preparation, skill in technic and thoughful after-care as other surgical operations. In fact, the possibilities for complications are greater here than in any other region of the body. There is no other region of the body which harbors such multitudes of bacteria, both putrefactive and pathogenic nor any part which so effectively resists them. So far as the usual practice goes, we have utterly disregarded the advance of science, and for all the benefit derived, it were just as well if Virchow, who proclaimed the cellular pathology, and Pasteur, who made surgery possible, had never lived.

Practically no attention is paid before extraction to the condition of the oral cavity. The condemned tooth, covered with septic débris and calculus, is untouched until it is grasped by the forceps, the blades of which are forced into the soft tissues and bone, carrying infection into the newly made wounds.

The general surgeon of today would be justly sued for malpractice, and his license would be speedily revoked, if he operated in like manner, and after having operated dismissed his patient, not expecting to hear from him or see him again.

The laity, because of such barbarous treatment in times past and because of little advancement in practice up to the present time, does not know any different; it does know that instruments should be boiled, but of what value are sterile forceps if they are to be literally smeared with dangerous bacteria just before being pressed into a wound made by these same forceps? Furthermore, not only is no fear evidenced in creating one infected wound, but half a dozen or even two dozen teeth are treated in the same manner at the same sitting, leaving lacerated gums separated from the bony process; and the patient, still bleeding, is dismissed.

It is unfortunate that the individual who extracts teeth is not compelled to take care of the patient until he be restored to his former state of health. If that were the case the extractor would very soon learn that not a few deaths and many complications and untoward sequelae follow what is thought to be an inconsequential incident. The fact is that when the patient falls ill as the direct result of the extraction, it is his physician who finds a cellulitis, Ludwig's angina, necrosis, lymphadenitis, phlegmon of the neck, meningitis, brain abscess, or some other septic process in distant parts, which may be directly traceable to the extraction. These are all possibilities and are not so infrequent as they may seem. Now, how can we lessen their occurrence? In the first place, we must make application of our knowledge of pathology and bacteriology, realizing possible developments following operation within an infected field on an infected organ.

Secondly, we should apply the principles and practice of surgery to each operation, and exercise judgment as to the number of teeth to be extracted at one sitting. We know that at various times we do have showers of bacteria appearing in the blood stream. We also know that, in order to produce a lesion of infection, we must have a sufficient number of bacteria. The relationship between virility of bacteria, number of bacteria, and resistance of the body or tissues, on which in varying degree the establishment of infection depends, is beyond our calculation or comprehension; consequently we must avoid carrying bacteria into the tissues, we must avoid as much as possible the dissemination of bacteria already present, and we must endeavor to have the patient in the best possible health. Usually, however, we must choose the lesser evil. Undoubtedly the bacteria present within the granuloma's at root apexes may, by the manipulation consequent to extraction, be forced into the lymphatics and thin walled venous capillaries, passing readily into the general circulation. Thrombophlebitis in any part of the body with septic liquefaction of the thrombus liberates bacteria directly into the general circulation; consequently we should seek to avoid such possibilities. The following report seems clear cut, and I am allowed to report it by the courtesy of Dr. W. B. McClure of Evanston, Ill.:

A woman, aged 42, consulted Dr. J. A. Lichty of Pittsburgh, Nov. 12, 1920, complaining of nervousness, becoming more marked during the last three years; there was some palpitation, dyspnea and slight tremor on exertion; also constipation with occasional diarrhea. There had been some loss of weight. Physical examination and laboratory tests revealed little abnormal except a white cell count of 4,200, with 50 per cent. polymorphonuclears, 27 per cent. large mononuclears, 21 per cent. small mononuclears, and 2 per

6. Ravary: J. d'urol. méd. et chir., 1913.
7. I am indebted to Dr. Richard Bower, my intern, for the review of the literature, and detailed report of this case.

cent. transitionals. Gastric analysis revealed the absence of free hydrochloric acid; combined hydrochloric acid, 20 per cent.

A roentgenogram of the teeth disclosed several apical infections, and because of them it was decided to extract these teeth. November 26, at about 3 p. m., the upper right second bicuspid, which had been free from tenderness and swelling of the soft tissues, was extracted by a careful, competent dentist, a local anesthetic being employed.

The granuloma came away with the tooth.

The next morning, November 27, the patient awoke with a headache and, as she expressed it, "felt miserable." The temperature at 11 a. m. was 99.8. November 28, the headache was less severe, but the face and ears were red and burning, the highest temperature, 100.6.

The following morning, November 29, as the temperature was nearly 101, the patient stayed in bed. At noon a fine rash was noticed on the face, neck, chest, shoulders and thighs, which by November 30 had spread over most of the body and which almost disappeared during the next twenty-four hours.

November 30, there was a chill, the highest temperature being 101.4, which on December 1 rose to 102.4. During these days the morning temperature was about 99.8 and the family physician, Dr. A. M. Lichty, decided that it was not a case of scarlet fever.

December 2, the temperature was around 102, but on December 3 it rose to 103, and it was noticed that the patient had difficulty in finding the right words to use, and later answered "yes" and "no" only.

December 4, the temperature was normal but the patient seemed weak and languid, and objected to being bathed, complaining of soreness in her muscles, especially those of the back of her neck.

In the early afternoon she made no effort at speech, but followed her attendant with wide open eyes as she moved about the room. The evening temperature was normal, but the patient paid no attention on being questioned and later had a convulsion, lasting ten minutes, with opisthotonos, after which she became comatose.

Following the convulsion her temperature rose, reaching 106 by axilla the next evening, when it was noticed that there was rigidity of the neck and arms, more marked on the left side, with very little rigidity of the legs.

Lumbar puncture, December 5, yielded a clear fluid under little or no increase of pressure. Culture of the fluid was negative.

The urinary findings were normal throughout.

The blood examination revealed: red blood count, 4,390,000; hemoglobin, 72 per cent.; white blood count, 8,600. Differential count: polymorphonuclears, 62 per cent.; small mononuclears, 28 per cent.; large mononuclears, 5 per cent.; transitionals, 3 per cent.

Examination of the heart, lungs and abdomen, December 5 and 6, was negative. Within three days the temperature had dropped to normal. The patient remained in coma until the afternoon of December 6, when she opened her eyes for a short time, but at 11 p. m. she again awoke, became delirious, and was restrained with difficulty; December 8, she fell into a quiet, restful sleep, and on awakening her mind was quite clear.

Within the next few days she continued to improve, both mentally and physically, and at the present time weighs more than she has for several years.

COMMENT

It may be questioned whether the encephalitis which is believed to have occurred was due to a bacteremia precipitated by the disturbance of the focus of infection, on the ground that it might have been a coincidence; but it seems logical to assume that such was not the case. We have examples of rupture of tuberculous glands into the thoracic duct, producing a hematogenic tuberculosis; we have brain abscesses in the course of bronchiectasis, and we see multiple abscesses in the skin from a thrombophlebitis.

We must have reports of more cases of sepsis following extraction of teeth, and a further study of them in order that we may know what to fear when we extract a tooth.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. WENKER, PETTIT, DORRANCE AND POTTS

DR. ROBERT H. IVY, Philadelphia: Carcinomatous and sarcomatous odontomas need further investigation before they can be established as definite pathologic entities. In the cyst cases reported as having a lining of connective tissue cells, it is likely that these are either epithelial cells flattened out by the pressure of the fluid, or the epithelium which originally lined the cavity has been lost by atrophy. It is not the situation of the developmental points of fusion of the jaw bones which determines the location of dental root cysts but where the periapical infection leading to the cyst happens to be, and sufficient space for development. Root cysts are not so often found in the region of the symphysis of the lower jaw as in the premolar and molar regions. They are frequent in the anterior portion of the upper jaw because the teeth in this location are often pulpless and there is plenty of room for expansion. Root cysts are often found in parts of the jaws from which the teeth have been lost. Partsch's operation is not an extirpation but a marsupialization. This method is preferable to shelling out the entire cyst wall in the case of the larger cysts of the upper jaw because of the danger in the shelling out process of creating an opening into the nose or the maxillary sinus, which may be very difficult to close. The complete extirpation is reserved for small cysts or for those in which there is difficulty in creating a wide opening. In all cases in which any epithelial lining is to be left behind, the communication of the cyst cavity should be with the mouth rather than with the nose, because the subsequent course of the case can be inspected directly. The solid central tumors of the mandible are more common than the adamantine growths. The differential diagnosis of central tumors, that is, fibroma, fibrosarcoma, giant cell myeloma, and various types of cysts, can generally be made by radiographic and clinical examinations. In the root cyst there is nearly always present a tooth with a devitalized pulp or the history of the extraction of such a tooth. In the dentigerous cyst the tooth will be absent from the arch and will be shown radiographically to be unerupted. In the tumors containing solid tissue the full complement of teeth may be present and the radiographic picture will show evidence of the presence of solid tissue in the bone cavity. The rare case of chancroidal infection of the chin reported by Dr. Potts warns us to be on the lookout for such infection.

DR. THEODORE BLUM, New York City: Cysts show no predilection, but attain larger proportion in more cancellous bone. I have seen two cysts caused by devitalized temporary teeth. In the majority of cases without fistula, I have found the contents sterile. When the fluid was straw colored, the cholesterin crystals were golden yellow; when the fluid was dark brown, the crystals had a silvery appearance. Microscopically, the cyst membrane showed an epithelial lining. Grawitz claims that it is derived from the oral mucosa. I have found only one case in which a maxillary cyst had broken into the antrum. The diagnosis of cysts in the maxillary molar region from the roentgenogram alone is quite difficult in the absence of characteristic clinical symptoms, as in cases originating from buccal roots, in which the cyst is mostly formed outside the maxilla. I wish to correct the statements made by Drs. Dorrance and Ivy that the Partsch operation is the most conservative. Partsch describes a conservative and a radical operation. The conservative is used in cases of large cysts especially in the maxilla, to avoid opening into the antrum or nasal fossa. Many operators have felt that for fear of recurrence here, conservatism was not in accordance with surgical principles. This has been disproved by Partsch who, in 1898, reported 200 cases in which microscopic examination of the membrane showed that it had changed into one practically identical with the oral mucosa.

DR. THOMAS L. GILMER, Chicago: I have been accustomed to classify cyst and odontomas of the jaw separately, since,

strictly speaking, an odontome is not a cyst. In my collection of odontomes none had cyst walls, so far as I was able to find. I favor a less complicated classification of cysts of the jaw: (1) follicular cysts; (2) dentigerous cysts; (3) cysts associated with the peridental membrane of teeth having septic roots, and (4) cysts found in any part of the jaws seeemingly having no connection or relationship with the teeth. The origin of these cysts, with the exception of the follicular cysts, has not, to my knowledge, been determined. Class 1 may be associated rather definitely with the tooth follicle and contains only one tooth. Class 2 has been attributed to epithelial rests. Class 3 may be associated with the epithelium of the peridental membrane of teeth having septic root canals. Class 4 does not appear to have any connection with the teeth in their origin. The most satisfactory explanation of the origin of this type is given by Eve. He supposed them to be an inclusion of a part of the epiblast layer by the mesoblast in fetal life. Later the epithelial cells are stimulated by some influence to growth and multiplication, forming a cyst. I have seen cysts of this kind develop on both sides of the mandible simultaneously. No part of the jaws seem to be exempt. I have never seen a jaw cyst become malignant or a cyst wall become calcified. Formerly, in the removal of jaw cysts, I packed the cavity with gauze. For the last year, instead of packing, I have, after removal of the smaller cysts, induced the flow of blood into the cyst cavity, completely filling it, then suturing over it the flap of gum and periosteum, which had been carefully elevated before the operation, so as to completely close the opening. As yet in no case thus treated has infection occurred. I prefer to depend on complete mechanical removal of cyst walls rather than on the use of escharotics. I have never seen a case of secondary chancroid develop on the face. The ignorance of some tooth extractors is appalling, and it is doubtful if they realize the serious results which often follow in their wake. I have seen many fractured, dislocated and infected jaws following removal of teeth by extraction specialists. Since the fad for "surgical removal of teeth," we may expect more serious infections resulting.

DR. M. I. SCHAMBERG, New York City: If a surgeon were to use a cautery knife in the removal of malignant growths much dissemination of tumor cells might be prevented, but I cannot agree with Dr. Bloodgood as to cauterizing cystic conditions about the jaw or epulis. I have never seen an epulis that did not spring from the peridental membrane or periosteum, with the base of the growth directly in the cancellous structure of the bone. Any attempt to remove these tumors in a nonsurgical manner is very likely to be followed by recurrence. It is bad policy to try to destroy the center of a growth by cautery without trying to close the wound or to leave any part of the membrane. If the Partsch operation is done that likelihood is not great, but any piece of epithelial tissue left in the enclosed wound is very likely to encourage recurrence. That is the reason why multilocular cysts so frequently recur after operation. We are going to see a lot of damage done by unwise judgment in the surgical removal of teeth, yet I do not want altogther to agree with those who believe that the surgical removal of foci of infection is contraindicated.

DR. HERBERT A. POTTS, Chicago: Dr. Bloodgood said that within a few years every dentist should have a cautery. Many surgeons and physicians do not realize the distinction between dentistry and surgery of the mouth. It would be a mistake to recommend the universal use of the cautery; in fact, I know that there are dentists who might keep a cautery in their offices with the object of cauterizing anything that might turn up. Almost every week I see a patient whose dentist, seeing a swelling, stuck a scalpel into it and as a consequence, a simple cyst has become infected and a lot of trouble has followed. I was interested in Dr. Moorehead's idea of splitting the soft palate. Gilles advocated leaving the soft palate attached to the posterior border of the hard palate and not attempting to close the hard palate. He does this for the perfection of speech. The cleft of the hard palate will need to be closed by a plate. The social position of the patient might tip the balance in choice of procedure. If the soft palate is not dropped down, increasing the distance between the soft palate and the vault of the pharynx, it seems that we might expect a more perfect speech.

In regard to the etiology of multilocular cysts, I did a complete resection, going beyond the diseased bone, and I found areas of hemorrhage, or at least reddened areas. I removed another half inch of bone. In this bone were coils of blood vessels, like the glomerulae of the kidney. It was seemingly the development of other little cysts, which may account for the recurrence of a multilocular cyst in the remaining bone after resection through apparently normal bone. Granulomas never suppurate unless contaminated by pus-producing organisms. Simple granulomas always contain streptococci, either *S. viridans* or *S. hemolyticus,* or both. Granuloma with sinus means secondary infection. It has been my habit to enucleate these cysts, let them fill with blood, and suture the wound. I have been partial to the Partsch operation for a long time. The tendency which the bones of the face have to assume their normal contour in a few months is remarkable.

DR. V. P. BLAIR, St. Louis: I have seen twelve or more young people die from extraction of the teeth, and in every instance but one the extraction was done during an exacerbation of the infection. I do not believe the trouble is ever caused by the organisms floating around in the mouth. It comes from the organism which has its habitat at the root of the tooth and sometimes deep in the pockets. For that reason, as a surgical practice, if I have to operate quickly, within two weeks of the time I see a lesion in the mouth, I do not have the teeth cleaned because I have seen so much trouble started up by energetic cleansing of the teeth after the patient was injured.

DR. L. T. LE WALD, New York City: It is the general opinion that a tumor developing in the bone in a case of Paget's disease is unquestionably sarcomatous. Such is not the case in my experience. There may be areas of degeneration that go on to cyst formation, but if one studies these areas one would never mistake Paget's disease for sarcoma. I once performed a necropsy on a man who died as a result of meningitis following extraction of an impacted third lower molar. It was very difficult to say whether infection was there prior to the extraction, but the probabilities are that the condition troubled him for some time and he finally decided to have the tooth extracted. The necropsy revealed a basilar meningitis, which was the cause of death.

DR. G. V. I. BROWN, Milwaukee, Wis: We are in a rather uncertain stage with regard to the differential diagnosis between a malignancy of serious character and a nonmalignancy in these cysts and growths of the jaw. I do not close up any opening in the jaw, when I am not sure of its contents. I am not nearly as much afraid of the secretion of the wound as I am of what might be inside the cyst. With regard to multilocular cysts, whether they are malignant or not, there is no question that they tend to expand. I would not disarticulate a jaw and deform the patient unless I knew I had to do it. We might just as well recognize the fact that unless we are going to deform jaws unnecessarily, we must use radium and the roentgen ray.

DR. F. B. MOORHEAD, Chicago: Certain well defined pathologic conditions are seen in the mouth that are not seen elsewhere in the body. The special physiology of the mouth requires special attention. The mesothelial group of tumors seen in the mouth is well defined and easily classified. First, the small hard, nonvascular, slow growing fibroma, which may exist for years. Second, the vascular fibroma which grows rather rapidly and in cases becomes quite large. Third, the giant cell tumor which differs from the vascular fibroma in that it contains large numbers of giant cells; probably nothing more than a coalescence of fixed tissue cells through the active stimulation of blood supply and consequent rapid growth. None of these three types is malignant. The so-called giant cell tumor is a benign affair, never invades bone, never metastasizes and never destroys life. It is a mistake to classify this as a sarcoma. Fourth, the sarcoma, which is malignant in terms of the size of its elements. The giant cell sarcoma of the jaw is the least dangerous of the various types, and offers the best prognosis when removed intelligently. On the other hand, the small round cell sarcoma is always fatal, as is very largely true of the mixed cell or spindle cell type.

DR. GEORGE M. DORRANCE, Philadelphia: In the differential diagnosis between these tumors we have not had much difficulty except in those situated in the posterior half of the

lower jaw. In these cases a frozen section is of great assistance. I do not like the operation that opens these cysts through the roof of the mouth. Patients will have difficulty in swallowing and in talking. The Partsch operation is perfectly well known. The Dencha operation, a modification of which I use, is particularly indicated when the cyst fills up a large surface of the nasal cavity. Putting radium into these mouths is not a simple matter. In a number of cases I have injected alcohol into the fifth nerve or its branches on account of the terrific pain produced by the use of radium. Almost every patient who has had radium treatment for tumor of the lower jaw develops severe pain.

Clinical Notes, Suggestions, and New Instruments

PRIMARY SYPHILITIC NOSE INFECTION: REPORT OF A CASE

KURT JAENICKE, M.D., CLINTON, IOWA

While extragenital syphilitic chancres are by no means uncommon, the localization of a primary sore at the entrance of the nares in undoubtedly rare. Thompson[1] illustrates and reports such a case. Since Thompson characterizes chancres in this locality as "medical curiosities," one may be warranted in reporting another instance of primary syphilitic nose infection.

T. R., a man, aged 35, married, whose family history was negative, who denied all previous venereal disease and who appeared healthy and robust, in August, 1921, while at work, was accidentally struck on the nose by a fellow laborer's shoulder. Slight tumefaction followed. About one month later he noticed a fissure at the entrance of the left naris extending from the ala inward toward the septum. A rhinologist cauterized the wound several times with chemicals in an effort to stay its progress, but the fissure steadily enlarged until a distinct ulcer was formed.

When the patient came under observation, there was an erosive sore on the floor of the left anterior naris about 1 cm. (⅜ inch) long, 0.5 cm. (3/16 inch) wide and 4 mm. (5/32 inch) deep, with a clean base and sharply elevated edges. The ulcer encroached on the skin of the upper lip to the extent of 2 mm. (8/100 inch). The neighboring tissues were indurated, and the submaxillary glands of the left side were moderately swollen. There was also a beginning papular syphiloderm sparsely scattered over the trunk and the legs. The patient's blood gave a ++++ Wassermann reaction.

The manner of infection was probably from an intermediate source, the injury to the nose furnishing a fertile soil.

402 South Second Street.

A NEW METHOD FOR DEMONSTRATING SPIROCHETES BY LYMPH GLAND PUNCTURE

IRWIN C. SUTTON, M.D., LOS ANGELES

So inclined is the lay public to douse every superficial or deep skin lesion with antiseptics that it is not unusual to find the primary lesion of syphilis covered with mercurial ointments, painted with liquid preparations or even cauterized. To avoid the delay in diagnosis occasioned by the removal of these medicaments, several methods of finding the spirochete have been devised, usually by aspiration of the rim of the chancre or of a regional lymph gland. In both these methods it is practically impossible to procure specimens of serum without, at the same time, getting a large amount of red blood cells in the mixture. Schultz has described a method whereby a small amount of physiologic sodium chlorid solution is injected into the gland and then aspirated; this, however, is not free from the objection mentioned above. Since the warning of Eberson that "spirochetes" may be derived from red blood corpuscles, it would seem especially desirable to obtain serum as clear as possible. I have been partly successful by the following technic:

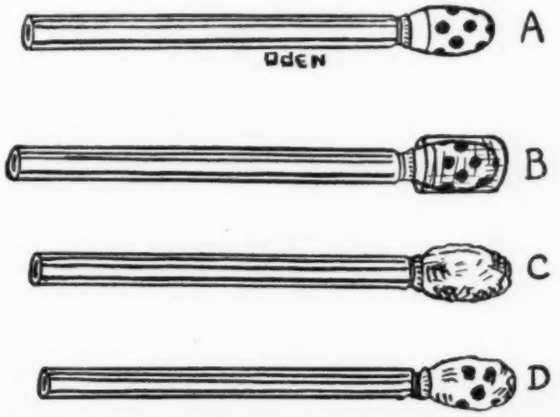
Three minims of distilled water are drawn up into a Luer tuberculin syringe; a 24 gage needle is then attached, the area over the satellite gland then painted with iodin, frozen with ethyl chlorid, and the needle inserted until the gland moves with the needle. The needle is rotated several times and the plunger slowly withdrawn until 3 minims of serum are obtained. The mixture is then rapidly ejected into a small receptacle and redrawn into the syringe; this is done several times. A drop is taken and examined under the dark stage for the spirochete in the usual manner. I have on eight occasions demonstrated the spirochete in glands draining lesions that were apparently saturated with mercury. This method avoids delay in diagnosis, and assures us that the organisms are specific and are not saprophytic; also the painlessness of the operation, especially in those tender lesions with mixed infection from the bacillus of Ducrey, is much appreciated by the patient.

412 West Sixth Street.

A METHOD FOR SEALING THE DISTAL END OF THE EINHORN INTESTINAL TUBE

CONSTANTINE L. A. ODÉN, M.S., M.D., NEW YORK

During the course of an investigation of the bacterial flora of the intestine at different levels,[1] Dr. Aronovitch found that the intestinal tube rapidly became contaminated after its introduction into the alimentary tract. Under these circumstances it was impossible to determine with any degree of certainty the characters of the flora at the levels reached by the tube. Various procedures for sealing the distal end of the tube, such as coating the olive with a layer of rubber or paraffin, were tried but were found unsatisfactory. To fulfil the conditions of the investigation it was necessary not only to seal the end of the tube but also to have the seal under perfect control, that is, so that it may be broken at any desired level.



A, olive at end of tube (actual size of olive); *B*, gelatin capsule covering the olive; *C*, parresine covering; *D*, olive when parresine coating has been perforated.

The following procedure was finally adopted and found satisfactory: The tube is sterilized thoroughly before the sealing; this is best done in a steam sterilizer. After sterilization the water is drained, and the olive (*A* in the accompanying illustration) is heated over a Bunsen flame to make sure that no organisms remain on the outer side, also to dry it. The large end of a gelatin capsule is placed over the olive and must fit snugly, as its purpose is to act as a base for the parresine which is to be sprayed over it by using a spraying apparatus such as is used in the treatment of burns (*B* and *C*).

Care must be taken that not too thick a layer of parresine is sprayed over the capsule, as it will be difficult to perforate.

1. Thompson, Loyd: Syphilis, Ed. 2, Philadelphia, Lea & Febiger, 1920, pp. 72, 73.

1. This investigation is being carried out under the direction of Drs. Warren Coleman and Max Einhorn.

We have found that about 1 mm. thickness of parresine is sufficient to protect the olive from the intestinal contents. Paraffin may be used as well as parresine, but the latter is preferable as it is softer and easier to perforate at the body temperature. The capsule is sterile, being kept in 85 per cent. alcohol at least twenty-four hours before using. This has been proved by the taking of repeated cultures. The parresine and the spraying apparatus are sterilized.

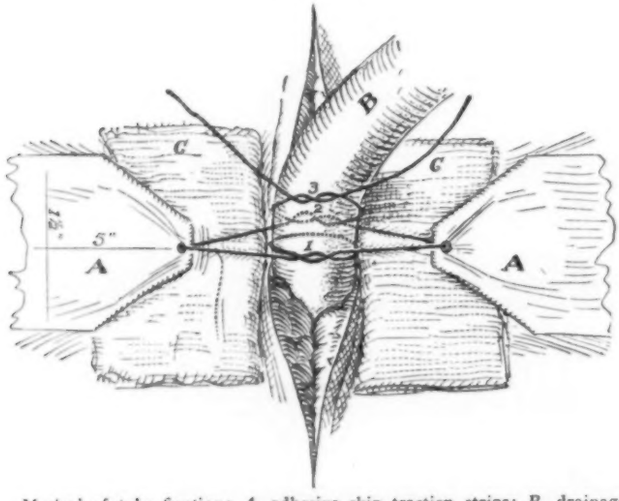
Although the tube is drained of the water which remains after sterilization, there remains enough moisture within it to dissolve the gelatin capsule, and this leaves only the parresine coating, which will stay on indefinitely until perforated (*D*). To perforate, all that is necessary is to force air into the tube by a previously sterilized syringe, the same syringe being used for the withdrawal of the contents. The patient does not complain of any discomfort during this operation.

Bellevue Hospital, Twenty-Sixth Street and First Avenue.

A SIMPLE METHOD OF DRAINAGE TUBE FIXATION

MEREDITH F. CAMPBELL, M.D., NEW YORK

Having had difficulty with the proper fixation of drainage tubes and catheters in various parts of the body, especially the bladder and loin for urinary drainage, we devised the method here described, which has proved successful.



Method of tube fixation: *A*, adhesive skin traction strips; *B*, drainage tube or catheter tied in place by ligature; 1, 2, 3, knots tied in order indicated about tube; *C*, small gauze dressing beneath traction ligatures.

As shown in the diagram, two strips of adhesive plaster, about 5 inches (12.7 cm.) long and 1½ inches (3.8 cm.) wide are folded at one end to make a blunt point. A small hole is made near the point going through the double folded layer of tape, thus preventing tearing out when traction is applied. These strips are placed on the skin on each side of the wound so that the holes are about three-fourths inch (2 cm.) from the wound margins. The tube or catheter is inserted to the desired depth. At the skin level a ligature (1) of a stout tie material is placed about the tube and tied. The ends are then introduced through the holes and brought back to the side of the tube opposite the first knot. The knot here (2) is made after exerting traction on the ligature to the desired degree, thus approximating the skin edges. The ligature is now passed around the tube once or twice and a final tie (3) made.

The advantage of this method over other methods in use is that the entire wound is left open, and there is no damming back of pus, as is the case when the tubes are fixed by the use of adhesive strips applied directly. A small, dry dressing is applied to the wound.

We have found that by placing a small piece of gauze immediately beneath the ligature as shown by the diagram, a somewhat better skin approximation is obtained and the tie is lifted away from the skin edges.

Bellevue Hospital.

A NEW METHOD OF TREATMENT FOR VARICOSE ULCERS OF THE LEG

H. A. MCKNIGHT, M.D., PHILADELPHIA
Assistant Professor of Surgery, Graduate School of Medicine of the University of Pennsylvania

The methods of treatment of chronic varicose ulcers of the leg are legion. No one procedure has proved successful in all types of cases, nor has any method become standardized. Local treatment of the ulcer is useless, and only pressure applied to the leg from the toes to the knee and maintained will give relief and hasten a cure. This pressure is usually kept up by bandaging, but it is rare that a bandage can be held in place for more than a few hours. Many kinds of elastic stockings are used; but to the average dispensary patient, seen in our large hospitals, the price of such a bandage is prohibitive and its life too short to be practicable.

We have devised a dressing that has given us excellent results. It is quickly applied, is cheap, gives immediate relief of pain and discomfort, and promotes rapid healing of the ulcer.

The leg, including the ulcer, is washed with alcohol followed by ether. Strips of adhesive plaster 1½ inches (38 mm.) wide are started at the web of the toes and carried about the foot. The next strip is parallel to the first, and overlaps it about one third of its width. These strips are then carried up the leg, applied with sufficient pressure to empty and support the superficial veins. No dressing covers the ulcer bed, it being covered with the adhesive plaster as it ascends toward the knee. Over this dressing is a snug figure of eight muslin bandage. This dressing is kept on for five days, when it is removed by slitting it up the side and taking it off in one piece. The serum secreted by the ulcer has by this time loosened the dressing, and it is easy to remove. The leg is again cleaned and a new dressing applied.

After the ulcer has closed, we order a fiber elastic bandage of the Randolf type and give specific directions to the patient that at no time shall she stand erect without this support. This bandage is put on in bed in the morning and removed in bed at night.

241 South Thirteenth Street.

BILIARY COLIC FOLLOWING ATTEMPTED GALLBLADDER DRAINAGE

C. W. DOWDEN, M.D., AND C. D. ENFIELD, M.D., LOUISVILLE, KY.

This case is reported because it appears to be unique, at least, so far as occurrence of colic prior to the injection of magnesium sulphate into the duodenum is concerned.

Mrs. B., aged 67, a widow, was referred to us for diagnostic investigation on account of chronic ostearthritis. Her family history was negative, and her present history not noteworthy until the present illness, which appeared insidiously and was marked by gradual enlargement of the joints of the hands and feet with tenderness and limitation of motion. Her general health had been good. The physical examination revealed some yellow coloration of the skin and the sclera, large cryptic tonsils and slight general diffuse tenderness throughout the lower abdomen. It was otherwise entirely negative. Roentgen-ray examination of the sinuses was negative, but revealed some ostearthritic changes of moderate extent in the hands, feet and spine. Roentgen-ray study of the gallbladder region, performed prior to the attempted drainage, disclosed a single large stone apparently about the size of a marble and of rather unusual density. It should be noted that the results of this examination were not available, owing to the time consumed in developing and drying the films, until after the gallbladder drainage was attempted. The routine laboratory examinations of the blood and urine were normal, considering the age and sedentary habits of the patient. In a further effort to locate the possible focus of infection it was decided to perform a gallbladder drainage according to the Meltzer-Lyon method. The fasting stomach residuum obtained on passing the duodenal tube contained no bile, but a considerable amount of thick mucus, no free hydrochloric acid, no blood, a total acidity of 12, no lactic acid

and only some squamous epithelial débris on microscopic examination. The patient was intolerant of the tube from the first, but there was no complaint of pain or unbearable distress until the additional length of tubing had been swallowed up to the duodenal marking and the return flow began to be alkaline in reaction to litmus. Promptly after this the patient began to complain bitterly of sharp cramplike pain in the epigastrium, most marked on the right side, and of difficulty in breathing, together with numbness of the hands, arms and legs. The pulse became rapid and weak, though regular. The tube was promptly withdrawn, but this did not relieve the pain, which continued for more than an hour in spite of the hypodermic injection of morphin, one-fourth grain (16.2 mg.), with atropin, 1/150 grain (0.43 mg.), and the use of hot packs over the upper abdomen. No further attempts were made to drain the gallbladder.

On finding in the roentgenograms the stone previously referred to, we concluded that the presence of the duodenal tip opposite Oddi's sphincter had probably set up the associated reflex of sphincter relaxation and gallbladder contraction, which is believed ordinarily to follow injections of magnesium sulphate solution into the duodenum, and that this action had forced a small stone into the cystic duct with the resulting typical biliary colic. Unfortunately, owing to the fact that the roentgen-ray findings were not immediately available, no attempt was made to recover the gallstone from the stool.

1100 Francis Building.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

BUTYN

Preliminary Report of the Council on Pharmacy and Chemistry

Butyn is the name applied by The Abbott Laboratories, Chicago, to a new local anesthetic, proposed for use in place of cocaine in surface anesthesia in the eye and for anesthesia of other mucous membranes. The Abbott Laboratories have presented butyn for inclusion in New and Nonofficial Remedies.

Butyn is a definite chemical of nonsecret composition. Pharmacologic studies indicate that the drug is of therapeutic value. So far this value has, however, not been confirmed by adequate clinical trials; and for this reason, the Council has postponed the acceptance of the drug for New and Nonofficial Remedies. For the information of those who may wish to put butyn to clinical trial and with the desire to make such trials of value, the Council has authorized publication of the following statement. W. A. PUCKNER, Secretary.

Butyn is para-aminobenzoyl-gammadinormalbutylaminopropanol sulphate. It is a white, hygroscopic solid, very soluble in water.

In the accompanying table the efficiency and toxicity of butyn with that of procaine and cocaine are compared.

On the normal human eye, a 0.5 per cent. solution of butyn is less efficient than a 1 per cent. solution of phenacaine (holocaine), but more efficient than a 1 per cent. solution of cocaine or a 1 per cent. solution of eucaine. Butyn solutions are nonirritant.

When injected hypodermically into albino rats, the toxicity of butyn is two and one-half times that of cocaine; but the fatal dose of butyn (injected intravenously into cats) is about equal to that of cocaine. Sublethal doses are more dangerous than those of cocaine.

The pharmacologic investigation indicated that butyn may take the place of cocaine, in whole or in part, for surface anesthesia of mucous membranes; that it may be superior for this purpose, and especially for use in the eye, to other synthetic anesthetics, for the reason that it can be used in materially lower concentrations (presumably because of more prompt absorption). On the other hand, it does not appear promising for injection or spinal anesthesia, since its toxicity is materially greater than that of procaine. Reports from a small number of physicians, favorable to the use of butyn in eye work, have been submitted to the Council. However, these do not contain adequate details on which independent judgment may be based, nor do they state whether or not suitable control experiments were made.

COMPARATIVE EFFICIENCY AND TOXICITY OF BUTYN, PROCAINE AND COCAINE

	Efficiency on Motor Nerves	Efficiency on Sensory Nerve Trunks	Efficiency on Rabbit's Cornea	Efficiency on Frog's Skin	Intradermal Wheal Test	Toxicity for Perfused Turtle Heart
Cocaine.....	1	1	1	1	1	1
Procaine.....	1	½	⅓	⅓	..	⅓
Butyn.....	8	2	1	2	2	1

To those who wish to put this drug to experimental clinical trial, the Council suggests that these trials take the form of comparing butyn, cocaine and phenacaine (holocaine), by alternating the use of these drugs in successive cases in certain groups. The following scheme is suggested for these experiments:

Foreign body in the cornea.
Corneal anesthesia for tonometry.
Operative anesthesia of cornea and conjunctiva.
Anesthesia of cornea and conjunctiva for removal of sutures.
Anesthesia of lids for opening a hordeolum and curetting a chalazion.
Anesthesia of lachrymal points and tear passages for dilatation, etc.
Anesthesia of cornea against pain of erosions.

In these experiments, the following observations should be recorded:

Anesthesia:
- Onset
- Depth
- Penetration
- Duration

Side Actions:
- Irritation—Immediate
  Late
- Pupil diameter
- Vascularity
- Drying
- Other side actions
- Effects on intra-ocular pressure, normal and in glaucoma, when practical.

Toxic Systemic Effects, if any.

If the anesthetic is to be used in fields other than the eye, corresponding schemes for clinical observations could easily be devised.

AMYLZYME.—An extract containing all of the digestive enzymes of the fresh pancreas of the hog.

Actions and Uses.—Amylzyme has the power to digest starch and protein and to split fats. It is claimed that it is useful in digestive disturbances resulting from a deficiency of pancreatic secretion and that it hastens the digestion of starch.

Dosage.—From 0.13 to 0.26 Gm. (2 to 4 grains), three times daily.

Amylzyme is sold only in capsules.

Manufactured by G. W. Carnrick Co., New York. U. S. patent applied for. No U. S. trademark.

Amylzyme Capsules, 2 grains.

Amylzyme is a pale yellowish white powder, having the characteristic odor of pancreatin and a faintly saline taste. It is hygroscopic and incompletely soluble in water, forming a turbid solution which is neutral or faintly acid to litmus. In starch digesting power, it is from three to four times more active than pancreatin U. S. P. IX, if tested by the U. S. P. method. According to the method adopted by the Council on Pharmacy and Chemistry (THE JOURNAL, July 11, 1908, p. 140) amylzyme converts from 110 to 130 times its weight of dry starch to a colorless end-point in ten minutes.

THEOBROMINE (See New and Nonofficial Remedies, 1921, p. 362).

Theobromine-P. W. R.—A brand of Theobromine-N. N. R.
Manufactured by Powers-Weightman-Rosengarten Co., Philadelphia. No U. S. patent or trademark.

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SATURDAY, DECEMBER 10, 1921

THE BLOOD AND ANTIPYRETIC DRUG ACTION

Antipyretic drugs are so commonly used in the practice of medicine today that their mode of action ought to be well established in every detail. It must be admitted, however, that the pharmacology of this group of potent substances is by no means completely unraveled. The most probable types of deportment of the antipyretics can be sketched in general outline. Two regulative factors, heat production and heat dissipation, in the body need to be taken into consideration. As both of these are under nervous control, the functions of the nervous tissues and centers in relation to body temperature must also be included in any scheme of interpretation. The demonstration of the presumable existence of heat-regulating centers in the body soon directed attention to the possibility that antipyretics are effective in lowering temperature by their action on these thermogenic centers. Before long it further became apparent, however, that the pharmacodynamics of the temperature-depressing compounds is not confined to these centers. Certain substances can act directly so as to influence heat dissipation or formation independently of any central function of the brain stem. As heat loss is a factor of heat dissipation from the surface of the body, the rate of loss of heat and its regulation will depend chiefly on variations in the circulation through the skin and the activity of the sweat glands. Some of the drugs in the so-called antipyrin group of antipyretics can depress the vasomotor tone, thus leading to marked vasodilatation, particularly in the skin.

More specific details of the possible antipyretic action of drugs have been furnished in recent years by Barbour and his pupils at the Yale University School of Medicine. They rest on the demonstration of the antipyretic action of glucose, the normal sugar of the blood.[1] For example, in the fever produced by injection of colon bacillus vaccine, intravenous injections of glucose are effective in reducing the body temperature of experimental animals, and the antipyretic action is paralleled by a decrease in the blood solids. In other words, the reduction of body temperature is exhibited at a time when the blood becomes diluted with water drawn from the tissues.[2] Normal subjects do not respond in this way. The fact that the antipyretic phase of glucose action is exhibited especially in the febrile and not in the normal state, which is readily explained by the presence of more available water in the tissues in the former condition, led to the hypothesis that the action of antipyretic drugs can be explained along similar lines.

The latest investigations of Barbour and Herrmann [3] at Yale confirm the assumption. Sodium salicylate, acetylsalicylic acid, antipyrin and quinin all increase the blood sugar concentration in both normal and febrile animals. Thus, after the administration of salicylates the glucose concentration in the whole blood may increase from 25 to 50 per cent. Antipyrin apparently gives a less marked effect than do salicylates, whereas quinin exhibits a greater one. At the same time there occurs, in human as well as experimental animal febrile cases, a notable dilution of the abnormally concentrated blood. This dilution accounts for the decrease in the body temperature.

The newly discovered mobilization of glucose in the blood after administration of antipyretic drugs thus suffices to support the theory of their action. They do not act primarily by decreasing heat production.[4] As Barbour and Herrmann [3] interpret the situation, antipyretics increase the blood sugar concentration. This in fever causes a plethora, extra water being available in the tissues. Plethora promotes the dissipation of the heat by radiation and surface evaporation, for the peripheral blood flow becomes augmented. In health, no plethora occurs—consequently there is no antipyretic effect. The possibility that methods of blood dilution other than that just discussed may be potent in promoting heat dissipation from the body needs to be kept in mind in further considerations of how fever in general may be modified in its course.

1. Barbour, H. G.: The Antipyretic Action of Dextrose, Proc. Soc. Exper. Biol. & Med. **16**: 136, 1919.

2. Barbour, H. G., and Howard, J. A.: Dextrose Plethora and Its Antipyretic Effect in Coli Fever, Proc. Soc. Exper. Biol. & Med. **17**: 150, 1920.

3. Barbour, H. G., and Herrmann, J. B.: The Relation of the Dextrose and Water Content of the Blood to Antipyretic Drug Action, J. Pharmacol. & Exper. Therap. **18**: 165 (Oct.) 1921.

4. Barbour, H. G.: Antipyretics, III, Acetylsalicylic Acid and Heat Regulation in Fever Cases, Arch. Int. Med. **24**: 624 (Dec.) 1919.

DO THE DIFFERENT IMMUNOLOGIC REACTIONS DEPEND ON ONE OR SEVERAL ANTIBODIES?

References to precipitins, agglutinins, opsonins, complement-fixation antibodies, and even anaphylactins, as they are found in medical literature, including even the writings of immunologists, generally carry the assumption that each of these is a distinct and separate entity. Despite this assumption, there has always been some doubt as to their individuality. The view that agglutinins and precipitins are the same thing, causing agglutination of visible cellular antigens and precipitation of

antigens in solution, has been rather generally accepted. There is also much evidence that the precipitin and the antibody which causes the anaphylactic reaction are identical, for it is known that the capacity of a serum to produce passive sensitization of an animal varies directly with its precipitin content. Richard Weil even found that the precipitate produced in the precipitin reaction, when washed free of serum and injected into guinea-pigs, makes them hypersensitive to the sort of protein with which the precipitin reacts. Not a little evidence is also available to prove that the complement-fixation antibody may be identical with the precipitin, and, furthermore, that the opsonin may be identical with the complement-fixation antibody. Thus, Wells [1] points out that opsonization and phagocytosis apparently constitute but one of a series of similar processes by which foreign proteins are removed from the blood and tissues; i. e., by lysis by extracellular enzymes when this is possible, as it is with simple protein aggregates (albuminolysis) and with some of the more labile cells (hemolysis, bacteriolysis); but in the case of more resistant structures, notably gram-positive cocci and acid-fast bacilli, extracellular lysis being unsuccessful, these protein structures are taken within the cells, where a greater concentration of enzymes may destroy them. Fundamentally, serum bacteriolysis and phagocytosis seem to be the same—in each case specific antibody sensitization prepares the bacterium for lysis by enzymes, either inside or outside the cells that furnish the lytic enzyme.

An attractive hypothesis is that there are two fundamental types of immunity reactions: One, having to do with substances which are essentially active poisons, neutralizes or inhibits their toxicity by direct chemical action.[2] In this group come the antitoxins and the antibodies for enzymes, venoms, poisonous vegetable proteins (ricin, abrin, etc.) and various bacterial hematotoxins. It is to be noted that these active substances are all similar to one another in being classed as large colloidal aggregates, resembling proteins, but not yet identified as proteins. The other group of immunity reactions is concerned with defense against foreign proteins, whether toxic or nontoxic and whether in solution or aggregated into cells (bacteria, corpuscles, tissue cells). The reactions of this group are all processes that tend to alter the colloidal state of the foreign proteins, by making them larger aggregates (precipitation, agglutination) or smaller aggregates (proteolysis, hemolysis, bacteriolysis, cytolysis), and in each case the reaction consists of two separate steps, sensitization and reaction. It is tempting to accept the view, championed especially by Friedberger, that in this second group of reactions only one and the same antibody is concerned, and that all the reactions are essentially the same, differing merely in the method by which the reaction is demonstrated.

Zinsser [3] has recently reviewed the evidence on this topic, and believes that the "unitarian" view is probably correct, asserting that the denial of such a view necessitates the assumption that the injection of a pure antigen calls forth five or six fundamentally different reactions on the part of the tissue cells, a theory that would be justified only on the basis of incontrovertible proof. Such proof is far from being satisfactorily provided, most of the evidence as to the existence of the separate antibodies being entirely quantitative. But the fact that a given serum gives much stronger reactions for one antibody than for another is really not convincing, in view of the lack of exactness of our methods, and the many interfering factors that may interfere more with one reaction than with another. Until it is definitely established to the satisfaction of the immunologists that all these types of antibodies exist, acceptance of the unitarian view as the probable truth has this important reason for its recommendation: It will make life much simpler for the student of medicine, whether undergraduate or practitioner.

1. Wells, H. Gideon: Chemical Pathology, Ed. 4, Philadelphia, W. B. Saunders Company, 1920, p. 189.
2. Zinsser, Hans: The More Recent Developments in the Study of Anaphylactic Phenomena, Arch. Int. Med. **16**: 223 (Aug.) 1915.
3. Zinsser, Hans: On the Essential Identity of the Antibodies, J. Immunol. **6**: 289, 1921.

THE ADMINISTRATION OF FLUIDS BY INTRAPERITONEAL INFUSION

The simple fact that more than two thirds of the body of an infant consists of water makes it evident that the regulation of the water content of the organism in early life is a matter of preeminent importance. Recent studies by pediatricians in various parts of the world have demonstrated that in various types of marasmus, athrepsia or nutritive collapse, under whatever designation they may receive from different writers, there is frequently a tendency to desiccation, which exhibits itself in a concentration of the blood as well as by more objective symptoms, such as fever, lassitude, inadequate secretion and functional inertia. The conditions depicted are always serious for the patient, and, what is equally deserving of emphasis, they demand very prompt treatment in infancy if a fatal outcome is to be averted. Thus, thirst alone may precipitate a series of toxic conditions within a short time. The factor of safety in the organism of the nursling is very small so far as its water reserve is concerned.

In the emergencies here presented, the replacement of fluid in the dehydrated body is frequently so urgent that unusual measures must be instituted. Oral administration of water is sometimes impossible because of vomiting, diarrhea or other alimentary conditions; and the quantity that can be furnished in this way may be small, whatever the rate of absorption from the gastrointestinal tract. Rectal introduction of fluid has, of course, long been recognized as a mode of meeting the

situations; but this, too, may become virtually impracticable if not impossible because of some condition of the bowel, and the quantities that can be managed by administration of enemas is not large. Subcutaneous injections of fluid demand skilful technic, and hypodermoclysis likewise has its quantitative limitations aside from the prospect of producing painful areas. Intravenous infusion is at best an emergency procedure calling for special ability and experience.

In view of these limitations in the field of rapid therapy by increasing the water available to the blood and tissues, the possibilities of intraperitoneal infusions have been seriously debated. They have already found adherents in this country who have recommended the procedure for the emergencies of infancy. Intraperitoneal injection in infants is said to have been used first in St. Bartholomew's Hospital, and to have been introduced in the United States in Howland's clinic at the Johns Hopkins Hospital.[1] Introduction of fluid into the peritoneal cavity can be accomplished with speed and technical success. This method, claiming for its advantages the ease and rapidity of administration, the large volume of fluid that can be given at one time, and the certainty that no fluid will be lost, has recently been studied with approval by Weinberg[2] in Stoeltzner's clinic for children at the German university in Halle. This pediatrician lays emphasis on the use of great care in securing asepsis. Repeated infusions of physiologic sodium chlorid, Ringer's or glucose solution can be carried out without detriment, he says, up to twice daily. Damage to the peritoneum, stimulation of the bowel or shock of any sort was not observed. However, Backes,[3] who applied the method to sixty-one children, all in a particularly poor condition when reaching the clinic, found that the method was not wholly without danger. Three of the children showed signs of collapse in from ten to twenty minutes after the infusion, and one, a premature infant, died in a half hour. In one case diffuse peritonitis was secondary to furunculosis, and in this instance Backes believes it would have been better if the infusion had not been attempted. There were also four cases of purulent peritonitis for which he holds the infusion responsible. There were no instances of peritonitis in older children, so that Backes finds the method very favorable for older children but has abandoned it for severe nutritional disturbances.

Absorption is demonstrably rapid, so that the improvement in pulse, respiration, weight and "toxic" condition is notable in a surprisingly short time in the critical cases characterized by dehydration. It is doubtless a conservative statement, therefore, to designate intraperitoneal infusion as a procedure for enabling the organism to withstand a threatening situation until the usual slower therapeutic procedures demanded can initiate their beneficial effects.

1. Aikmann, John: Methods of Administering Saline and Other Solutions to Infants and Children, J. A. M. A. **74**: 244 (Jan. 24) 1920. McLean, Stafford, and Lang, C. A.: Fluid Injections in Dehydrated Infants, Am. J. Dis. Child. **19**: 359 (May) 1920.
2. Weinberg, M.: Die Anwendung der intraperitonealen Infusion beim wasserverarmten Säugling, Ztschr. f. Kinderh. **29**: 15 (April 25) 1921.
3. Backes: Intraperitoneal Infusion, München. med. Wchnschr. **68**: 1032 (Aug. 26) 1921

Current Comment

THE MEANS OF DETERMINING CURE OF GONORRHEA IN THE MALE

The necessity for a strict standard as to what constitutes cure in gonorrhea is self-evident. The recent discussion by Clarkston [1] of the problems involved raises the question as to the exact status of the quiescent case of gonorrhea when there is no longer active evidence of specific infection and yet the gonococci are present somewhere in the genito-urinary tract. Is the condition one in which the focus is walled from the urinary tract in somewhat the same way as we think is the case in tuberculous latency? Or is the condition that of a carrier with such balance between host and parasite that the latter may multiply without any evidence of local infection, as in the typhoid or diphtheria carrier? Since the gonococcus lives but a short time outside the body under the most favorable conditions, it would seem logical to think that there must be a continued multiplication of the organism in order to survive in the host. If it is the latter condition that obtains, cultural methods would seem to offer the most certain means of determining whether the gonococcus has disappeared entirely in a given case. The methods to determine the absence of the gonococcus on microscopic examination after an attack of gonorrhea in the male have long included provocative measures, such as the passage of sounds, the oral ingestion of alcohol or other stimulants, and local urethral irritants, notably silver nitrate. More recently, focal reactions resulting from subcutaneous injection of gonococcus vaccine or some nonspecific protein, complement fixation and precipitin tests, as well as the cultural examination of expressed prostatic and seminal fluids and the urinary sediments, are being used also. Clarkston advocates clinical, microscopic and cultural examinations, but considers the serologic tests of limited value. As emphasized by Fraser,[2] caution is necessary in the use of provocative measures, since the development of a prolonged condition of infectivity may be favored from overzealous attempts at provocative reactions and local treatments. It may be recalled here that Herrold [3] concluded, after a study of 100 selected cases, that cultures of prostatic and seminal fluids and the first urine sediment are the most reliable single means of determining whether a complete cure has taken place, and that the complement fixation and precipitin tests may give results of value in conjunction with the cultural results. In any event, the absence of gonococci in carefully prepared, repeated cultures, coupled with negative serum reactions, should be the ideal standard of cure that henceforth must be enforced whenever possible.

1. Clarkston, E. R. F.: The Standard of Cure in Gonorrhea, Brit. M. J. **2**: 483 (Sept. 24) 1921.
2. Fraser, A. R.: The Standard of Cure in Gonorrhea, J. Urol. **5**: 439 (May) 1921.
3. Herrold, R. D.: Determination of Cure in Gonorrheal Infection of the Male, J. A. M. A. **76**: 225 (Jan. 22) 1921.

THE GENESIS OF MUSCULAR ATROPHY

The atrophy of a muscle following the section or degeneration of the nerve which supplies its innervation is a well known phenomenon. None of the various forms of treatment proposed have proved to be of avail in arresting the process. Electrical stimulation of such muscles has been instituted in the hope that the contractions brought about thereby would simulate the normal activity of the contractile tissue and thus prevent the effects of disuse. Several investigators [1] have found, however, that such stimulation fails to postpone the onset of the characteristic atrophy of denervated muscles; hence Langley offered the suggestion that it is attributable to overactivity rather than disuse of the contractile tissue, as more or less continuous fibrillation is often observed in these cases. It must be admitted that fibrillation may be an accompaniment rather than the cause of the muscular atrophy. Lipschütz and Audova [2] of Dorpat in Esthonia have recently demonstrated that section of the tendon attached to a muscle may be followed by an atrophy of the muscle nearly as great as that which attends section of the muscle's nerve supply. The result is not due to degenerative changes brought about by mere traumatism, for incision into the tendon without severance of the muscle from its attachments fails to induce any reaction leading to atrophy. The conclusion therefore seems tenable that the inactivity or the greatly decreased activity that follows when a muscle is detached from the "load" which it usually carries plays a decisive part in determining the atrophy; and presumably the analogous condition of decreased work when lack of innervation removes the motor impulses to a skeletal muscle suffices to explain the atrophy that ensues.

1. Hartmann and Blatz: J. Physiol. **53**: 290, 1920; **54**: 392, 1921.
2. Lipschütz, A., and Audova, A.: The Comparative Atrophy of the Skeletal Muscle After Cutting the Nerve and After Cutting the Tendon, J. Physiol. **55**: 300 (Aug. 3) 1921.

SURGICAL ELEPHANTIASIS

In the etiology of the acquired forms of elephantiasis, a localized stasis of the lymph is regarded as the most important predisposing factor. As is well known, the removal or destruction of regional lymphatic glands may be followed by elephantiasis of the part tributary thereto. Thus, after excision of the axillary glands a chronic edema and elephantiasis of the arm may follow. This phenomenon has been the occasion of much distress to patients and concern to surgeons after operations for eradication of cancer of the breast. Sometimes the swelling and the attendant disturbances do not appear until many months or even some years after the operation; and there may be frequent recurrences. Halsted [3] of the Johns Hopkins Hospital has come to the conclusion, after years of careful consideration of the problem and after some experimental study of the effects of various types of operative procedure, that blocking of the lymphatics is of itself not enough to explain the swelling of the arm, at least in its most pronounced forms seen so often after operations for cancer of the breast. He believes that some other factor is superimposed on the mere clearing out of the axilla and interferences with lymph and blood flow produced by the surgical technic. The records, Halsted believes, support his view that infection is very frequently, if not indeed usually, the overlying cause of the swelling of arms whose main lymphatic channels have been more or less blocked by operation. The infection, he adds, may quite conceivably be so mild in degree as to escape the observation even of those intently on the lookout for it. In a similar vein, Sir Patrick Manson has written: "Lymphatic stasis, by itself, does not cause elephantiasis. The obstruction may cause lymph edema, but not a true hypertrophy of the edematous tissues. If an inflammation (infection) is acquired in a closed area of lymphatic congestion, an event which may result as a consequence of the slightest traumatism, elephantiasis will then develop." Hence Halsted argues that, if such views prove to be correct, the term surgical elephantiasis (elephantiasis chirurgica) might be an appropriate one for the conditions which he has discussed.

3. Halsted, W. S.: The Swelling of the Arm After Operations for Cancer of the Breast—Elephantiasis Chirurgica—Its Cause and Prevention, Bull. Johns Hopkins Hosp. **32**: 309 (Oct.) 1921.

EXPERIMENTAL MEASLES

Despite the prominence of measles among diseases that still furnish serious problems to the student of public health and preventive medicine, progress in the elucidation of its etiology has been exceptionally slow. This has not been due to lack of serious attention to the subject, but rather has followed from difficulties inherent in the nature of the malady. The first significant step in the unraveling of the mysteries of infectious and contagious diseases has usually consisted either in isolating an infective micro-organism directly from patients or in successfully transmitting the same disease to experimental animals so that it can be investigated under controlled conditions chosen by the experimenter. A stumbling block in the path of inquiry has occasionally been found in the resistance or natural immunity of many of the laboratory animals to the diseases of man. There appears now to be little doubt, however, that measles can be transmitted from man to animals. In their early work, Anderson and Goldberger [1] assumed that animals other than the monkey are insusceptible to inoculation with the virus of measles. The striking investigations of Blake and Trask [2] indicate that monkeys inoculated intratracheally with nasopharyngeal washings from patients with measles develop the characteristic symptoms of the disease. More recently still, Nevin and Bittman [3] inoculated rabbits intravenously with the blood of patients having measles, the virus being passed through five successive animals in one series, each animal apparently giving evidence of characteristic infection, while blood from cases other than measles failed on inoculation to give similar evidence. The typical disease was, they assert, also passed from rabbit to monkey with characteristic resultant symptoms. The blood from the human patients was drawn on the third or fourth day after the onset of the disease. Perhaps it will not be long before the textbooks may cease to classify measles among the diseases that constitute "a group, the actual

1. Anderson and Goldberger: Pub. Health Rep. **26**: 847, 1911.
2. Blake, F. G., and Trask, J. D., Jr.: J. Exper. Med. **33**: 385 (March) 1921.
3. Nevin, Mary, and Bittman, Florence R.: Experimental Measles in Rabbits and Monkeys, J. Infect. Dis. **29**: 429 (Oct.) 1921.

biological causes of which are unknown, yet which show analogies to diseases the causes of which are known, so close as to make tenable the hypothesis that they are due to similar causes." [4]

THE ETIOLOGY OF EPIDEMIC ENCEPHALITIS

Certain resemblances of epidemic (lethargic) encephalitis to poliomyelitis have stimulated two similar investigations, which resulted in opposite conclusions. Amoss [5] found that the serum of patients convalescing from encephalitis does not protect monkeys against the inoculation of poliomyelitis virus, whereas Neustaedter, Larkin and Banzhaf [6] found that it does result in protection. We may assume, *a priori*, that the difference in results is due to the method: Neustaedter and his co-workers incubated the virus with the serum, while Amoss followed the technic he used previously with Flexner and Eberson. He administered the serum intraspinally and then injected large quantities of virus intravenously. The negative results of Amoss seem convincing, but the slight protection proved by the experiments of Neustaedter demands explanation. Several years ago it was found that the serum of patients suffering from herpes zoster was able to neutralize the poliomyelitis virus. It is therefore possible that the encephalitis virus is, like that of zoster, kindred, but not identical with the virus of poliomyelitis.

QUESTIONNAIRE ON ALCOHOL AS A THERAPEUTIC AGENT

The interest aroused among physicians by THE JOURNAL questionnaire on alcohol has exceeded all expectations. Fifty-four thousand two hundred questionnaires were mailed last week, 44,200 to subscribers of THE JOURNAL and 10,000 to nonsubscribers. At the time of going to press, approximately 12,500 replies have been received, about 23 per cent. These returns are almost entirely from the central states, from which replies ranging from 20 to 35 per cent. of the total number of questionnaires sent out have already been received. Checking, tabulating, and analyzing the replies involves a large amount of work. The results will be given to the readers of THE JOURNAL and to the public as soon as possible. In the meantime, all physicians to whom a copy of the questionnaire was sent are urged to send in their replies immediately. The copy of the questionnaire published in last week's JOURNAL was intended for the information of our readers, not to be used as a blank or to be filled out and returned. The names to which the questionnaires were sent were selected from THE JOURNAL mailing list and the directory, in the manner described last week. Only replies received from those to whom the special copies of the questionnaire were sent can be considered in tabulating the results. Many physicians have sent in letters with their replies making inquiries and suggestions regarding the questions involved. As these replies are coming at the rate of many thousand every day, it is obviously impossible to send a personal reply to every letter. The information already received regarding the attitude of the medical profession on this question has more than justified the labor and the expense of sending out this questionnaire.

4. Marshall, C. E.: Microbiology, Philadelphia, P. Blakiston's Son & Co., 1921, p. 854.
5. Amoss, H. L.: Immunological Distinctions of Encephalitis and Poliomyelitis, J. Exper. Med. **33**: 187 (Feb.) 1921.
6. Neustaedter, M.; Larkin, J. H., and Banzhaf, E. J.: A Contribution to the Study of Lethargic Encephalitis in Its Relation to Poliomyelitis, Am. J. Med. Sc. **162**: 715 (Nov.) 1921.

Association News

CONFERENCE OF CONSTITUENT STATE MEDICAL ASSOCIATIONS

(Continued from page 1826)

Second Meeting—Friday Afternoon, November 11

SYMPOSIUM ON COOPERATION BETWEEN THE CONSTITUENT AND COMPONENT BRANCHES AND THE AMERICAN MEDICAL ASSOCIATION (CONTINUED)

DISCUSSION

DR. HOLMAN TAYLOR, Fort Worth, Texas: I want to lay the predicate for this discussion on three problems. We shall never secure the coordination that we require for the best performance of the function that should be ours until the American Medical Association has reorganized, until the several kinds of membership have been abolished. There should be one membership only, and when a man joins his county society he should belong to all of them and pay his dues there for the whole thing. In so doing he has bought an interest in the Association. He owes it something, and it owes him something. I doubt whether the time is ripe for advancing such an idea, but certainly we might be thinking about it, and so far as we are concerned in Texas, we shall make a start of it. We have not more than 1,000 Fellows in my state, and I would like some means suggested to put the rest of them in full Fellowship in the American Medical Association. Fellowship as differentiated from membership does not strike me as a good thing. A great impediment has been that Fellowship required $6 for dues. A large number of physicians in the different states take THE JOURNAL and read it. It has been urged that where there are partners or two or more physicians in the same office they do not need to subscribe individually for so many journals. The American Medical Association has several publications, and it can and does substitute another periodical for THE JOURNAL under such conditions. At present the Fellowship dues are $6. The average state medical association per capita assessment probably is not over $5. A physician could pay into his county society from $10 to $15 and thus enjoy all the benefits of the organization and do away with any qualified membership. Even that is a small amount for the advantages he can get from the American Medical Association, and from his county and state organizations. Before that is done, however, we must draw our members closer to the American Medical Association and convince them that they owe something to the American Medical Association and the American Medical Association owes something to them, and that these debts are to be paid in full. When the country practitioner sees that this is an organization for sure and in fact he will take an interest in it. If we can so improve living conditions that he has a breathing spell between calls, writing prescriptions and discharging the duties of his profession, some of the problems which now confront us will disappear.

My idea of getting cooperation as a first step is to enlarge the office of secretary of the American Medical Association and the functions of his office personnel, also enlarging the facilities of his office so that he can do the things necessary to bring to the attention of the several state organizations those points on which they need to unite. There is no reason why there should not be reasonable uniformity of constitution and by-laws of every state association. There should be unifor-

mity in the matter of transfer of members from one state to another. There should be uniformity along the lines of legislation, medical education, hospital standards, and public information.

DR. W. E. MUSGRAVE, San Francisco: The fundamental principles of organization apply to the medical profession exactly as they do to every other vocation or activity of mankind. These problems have been so successfully worked out by religious bodies and business organizations that we can do no better than to copy them. Every physician has a dual function. He has the professional care of the sick patient, and he is charged with the duty and responsibility of citizenship, and that is true of every other man, whether he be a banker or a lawyer. The trouble with us as a profession is that by some curious method we have been trained as individuals; we have not had the character of training that every other young man that amounts to anything in the world gets; that is the training necessary for him to become an active member in organization work.

We have two state organizations in California, the state medical association and the League for the Conservation of Public Health. The state society keeps in close touch with the League for the Conservation of Public Health. If you will examine the constitution and by-laws of the state association or of the American Medical Association you will not find the machinery that is effective to handle such problems as politics, social medicine and medical economics, nor does it appear wise that a scientific organization should be so trained that it can handle these problems. All these problems require 365 days of work in the year, and they must be handled by men who are specialists in their line.

In California, about four years ago, the members of the medical profession met and organized the League for the Conservation of Public Health which has a constitution and by-laws very similar to any other business organization, like the Standard Oil Company, or any other organization that is successful. They have a powerful executive committee which is the mouthpiece for the organization. They have an office which operates every day in the year. That office is in charge of a man who is an expert, a thoroughly trained publicity newspaper man and politician. Both the state society and this organization are enabled to secure such services as they want from one of the most successful corporation lawyers in California, who gives about one third of his time to the work. The League for the Conservation of Public Health was organized to fight health insurance and other measures, and we have won 100 per cent. of the things we started out to accomplish.

We offer to members of our state society legal defense. In that regard we link up with the league, because under the leadership of our general counsel we have an assistant counsel in every county in the state, and that attorney is the best lawyer the general counsel can find in every county, as a part of the machinery of organization of both the state society and the league.

Another feature is our extension work of creating contact between the local medical society and the state society itself. We have a list of from fifty to 100 speakers from the medical centers who announce their subjects through the state journal, and they go to any society wherever they are asked to go to speak. Last month we furnished twenty-seven speakers to county societies. Our next step for extension work consists in clinic week. Any hospital that has a sufficiently large staff and is of sufficient importance to warrant assuming an educational position, is allowed to arrange a week's program of clinics, beginning Monday morning and closing Saturday night. Another phase of our extension work is to offer the services of traveling teams to cover the whole field of medicine—diagnosis, surgery and the various specialties—and we send these teams out on call to any society that wants them, preferably a group of societies.

DR. EDWARD LIVINGSTON HUNT, New York: In legislative matters the medical profession should lead, not follow. Its criticisms should be constructive, not destructive. The physicians should, through their leaders, see the needs of the community in legislative matters pertaining to medicine, should initiate the proper legislation and mold it into practical measures so as to benefit the community and both enhance and advance the profession. To accomplish this desired result, the physicians of the country must be organized, interested and instructed. There are several ways in which they may be organized by the aid, advice and cooperation of the national and state officers, by the elimination of medical politics and by editorials, communications, and high character of the national and state journals. Here I might add my hearty endorsement to a bureau of publicity. It should be official and ethically conducted. In New York we have formed a bureau of legislation. Last spring we appointed a legislative committee. The chairman of this committee resides at the state capital. We appropriated $4,000 so as to enable him to have an office and a stenographer. In this way he will be able to follow legislation, and become familiar with the views of legislators and the kinds of bills introduced into the legislative assemblies. This committee can inform the various county societies of what legislation is pending and can readily focus attention on the pertinent and prominent subjects. It can arouse interest throughout the state and stimulate discussion. No better way can be found to instruct the physician than this bureau of legislation. It should issue a weekly bulletin to each of the several county societies during the legislative session, familiarizing them with the immediate and future activities of the legislation along medical lines and inaugurating new ideas. A national bureau along that same line would help. Once interested and instructed, work on these lines is bound to follow. Another way in which interest may be aroused is to ask the various county societies to allot a certain proportion of their monthly meeting to a consideration of legislative rather than scientific subjects. At these meetings the subject for discussion might well be some reform which is agitating the public, or some bill pending before the state legislature. Papers should be read on both sides and a free discussion indulged in. Finally, there should be obtained from each county society an expression of opinion on the proposed bill or reform. This should be forwarded to the state secretary, who would then be in a position to discuss the subject and could in turn inform the parent organization as well as the other county societies. At these county society meetings the local assembly men and state senators should be invited not only to obtain their opinion and advice, but also to instruct and aid them in reaching a decision and outlining a course of action.

DR. W. G. RICKER, St. Johnsbury, Vt.: One feature of this discussion which appeals to me is the relationship between ourselves and the public. It is very easy to look at these questions from our own standpoint, but the valuable thing for ourselves is to look at them from the point of view of the public. The American public demands a right to regulate its own affairs. It demands the right to regulate railroads, corporations, labor unions, and the control of its own health; and when we assume the attitude of dictating to it what it shall do it is dangerous; but if we can go to the people as their advisers and appeal to them in such a way that they will place confidence in our advice, we have accomplished a great feat. The Vermont State Society at its October meeting took an action which I think promises a great deal for our society. In the House of Delegates one of our members, whose practice seemed to have been affected by having his consulting practice interfered with by the tuberculosis people who were conducting free clinics throughout the state, brought in a resolution, and two or three others supported his action. I do not recall the wording of the resolution, but if it had been passed and made public it would have presented the medical profession as being in an antagonistic mood, and the public would have had a right to say that we as physicians were looking after our own pocketbooks without regard to the public health. The Red Cross people, the tuberculosis people, the infantile paralysis people, and other activities are working with the same aim that we are, namely, to better the health of the people of the state. Undoubtedly those agencies are groping blindly when trying to bring people under medical care who otherwise would not receive it. There is no antagonism on the part of the public toward the doctors, and there is none on our part toward them; but there is a tremendous amount of misunderstanding reflecting itself in these

various activities in legislation, etc., and what is necessary is to get together all these different elements, and this winter we are going to have a meeting in our state of probably a hundred people representing all these agencies and try to come to an understanding of what is the best course to pursue.

DR. WENDELL C. PHILLIPS, New York: A great many of the points and suggestions made in these papers and discussions have been in the minds of the members of the Board of Trustees for the last year, and we are delighted to get this reaction from you. For instance, the education of the public regarding matters that are of vital importance to it and of which it knows very little. I have no doubt Dr. Green had in mind some of the things when he said the public is overfed. The public is not overfed. But it needs instruction and direction in regard to many things of which it knows very little. Your Board of Trustees has in mind at present the question of the best methods to be employed to educate the public. I have been much impressed regarding the methods employed in California, and I believe the outcome of all we are attempting to do will be to gradually bring the public up to the point where it will look after its health interests, and it ought to be doing this somewhat after the manner suggested. There must be a survey of the whole problem. Within six months one of the most searching surveys of this whole question will be undertaken in such a way as to bring to light all facts so that organized efforts can be made that will place the American people on a proper basis.

We are all at sea as to the word "state medicine." It is so loosely used that it leads to misunderstanding. We are using terms we are not clear about. The Board of Trustees has decided to make a survey of certain things and to do it in a thorough way, so that we may know all the facts about it. There are some evils lurking in certain partially organized plans, particularly the diagnostic clinic, and if there are any diagnostic clinics up to the time we begin this survey we shall survey them. We contemplate knowing whether they are conducted for private gain or for the public good. Some of the health centers schemes, some of the tuberculosis clinics, venereal clinics and Red Cross undertakings will be included in this survey. We propose to get all the facts. Those are some of the things that your Board of Trustees is attempting to do.

DR. E. J. GOODWIN, St. Louis: The Board of Trustees of the American Medical Association, as far back as I can remember, has been one of the most hard working and most unselfish bodies I have ever seen, working in harmony for the highest ideals of the profession. Speaking of the education of medical men, I have for a long time felt that medical colleges are at fault for permitting the entrance into the profession of men who are not capable of meeting the responsibilities of the medical profession from a moral standpoint. Such men have an inadequate conception of what loyalty means. If our medical colleges could limit their students to those whose moral attributes and ability to stand up loyally and firmly against personal interest, and who hold high conceptions of medicine as it ought to be practiced, I do not think we would have so many quacks and disrupters in our profession.

DR. OLIN WEST, Nashville, Tenn.: It has been only a few years since the American Medical Association did the first real educational work in spreading information concerning medicine among the people. They gave large doses of information and then quit. I am told that plans are under way for the organization of some effort that will take up that work where it was left off, and that the Association will have an avenue by which it can continue to give the right sort of information and advice about medical matters to the people Another thing: If we could have men like Dr. Billings, Dr. Phillips, Dr. Richardson or Dr. Mitchell, and other members of the Board of Trustees, at our annual meetings every year to talk about the things we are discussing today, it would go far in solving some of the problems that are mutual between the state associations and the American Medical Association.

DR. ARTHUR T. MCCORMACK, Louisville, Ky.: I would appeal to this body to look back to the history of medicine and to think of the spirit of sacrifice and the spirit of service that animated our forefathers. I would appeal to the members of the profession who are responsible for bringing young men into it to teach them the history of medicine and point out to them the high lights in our profession in the country. I agree with Dr. Phillips that we ought to make a survey of the problems confronting us, and in so doing let us assume the leadership that belongs to the medical profession. The responsibility of protecting the health and lives of the people is what we have before us. The medical profession has two purposes: first, to take care of the people who are going to be sick so that they may keep well, and second, to take care of ourselves, and if we do the first right, the people will do the second. We have to realize as a profession that one third of the men examined during the draft in this country were found to be defectives, and if they had been properly cared for at the right time by members of our profession, a vast majority of them would not have been defectives. We have to realize in organized leadership that is the task we have to perform. Until we have done that, we shall have the Red Cross, the tuberculosis societies, and all sorts of organizations attempting to do what we ought to be doing, and if we had been doing it these organizations would not have been necessary.

DR. L. B. MCBRAYER, Sanatorium, N. C.: I would like Dr. Colwell to tell us of the relation of the American Hospital Association and the various state hospital associations to the state medical societies; i. e., whether those organizations are attempting to standardize hospitals the same as the American College of Surgeons is trying to do.

DR. T. B. THROCKMORTON, Des Moine, Iowa: After all, the whole medical profession of this country is built upon the foundation of the general practitioner. I take it that, just as the general practitioner is the foundation of the medical society, so is he the whole foundation of the medical profession of these United States. The great problem before us is getting information to the lay people. All that a physician gets as a reward in a professional way is being paid for his advice. I have often thought if it would be feasible to publish a bulletin of some sort to circulate not so much among medical men as among the laity, in which the truths concerning the things relating to medicine and the profession can be brought before the public. I have the confidence in the average American citizen that if facts are put before him and he draws a conclusion, in the majority of cases that conclusion will be correct. I simply put that idea forward at this time because it would be one way of counteracting the propaganda that is being spread by the different cults.

DR. ALEXANDER R. CRAIG, Chicago: So far as organization is concerned, I would repeat that we have the machinery for conducting the work of the organized medical profession; but no matter how effective a piece of machinery we may have, it will be of no value unless we put motive power behind it, and the motive power is the personality of the executive officers of the several organizations, state and county, together with the membership of these organizations. This meeting will have value just in proportion to the degree in which the inspiration we have received is carried back and made effective in the work and life of the individual members of the organization.

DR. FREDERICK R. GREEN, Chicago: In regard to the suggestion made by Dr. Throckmorton of issuing a bulletin, about six years after the Council on Health and Public Instruction was organized it published a press bulletin which contained the most suitable things taken from THE JOURNAL and from other sources, and which were sent out to 5,000 newspapers. This bulletin was necessarily discontinued before we entered the war in 1916 on account of necessary financial restrictions, and so far the Council has not had sufficient funds to take it up again.

DR. N. P. COLWELL, Chicago: As to the hospital situation, as far as the Council on Medical Education and Hospitals is concerned, there is no conflict whatever between us and other organizations working in this field. The American Hospital Association and its state organizations are doing splendid work in connection with the questions they have to solve, such as hospital management, hospital equipment, nursing, kitchen supplies, and things which pertain to a hospital and its make-up. There is no conflict with the work of our Association in the study and investigation of hospitals.

DR. FRANK BILLINGS, Chicago: It was my hope that there would have been more discussion and suggestions offered concerning the general practitioner and how to improve his status and his knowledge. The replies to the questionnaire sent

out by Dr. Hines were enlightening in regard to whether we should encourage young men to study medicine as a vocation, and the answer given by one man was a good one. If I had a son who was blessed with a good physique and had the average amount of brains, if he was inclined to study medicine, I would rather have him do so than to take up any other vocation in life. When you say it is not worth while to study medicine because of the economic conditions of today, it simply means that there are not enough young men today who possess the moral stamina. (Applause.) If a young man is qualified, if he is honest, if he is animated by a desire to give service, and will practice medicine, regardless of what he may get out of it in a financial way he cannot keep patients away from him. We fear social medicine, and the tendency since the war has been for national organizations and for the government to favor paternal medicine, but it will never succeed. In the poorest hospitals in this country the average patient gets better treatment than the discharged soldiers have had. You may talk of any health work you please, but any scheme centralized in the federal government or centralized in the state will fail, for it is axiomatic that any work of value for the welfare of the people must be done by themselves and paid for by themselves.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Eradication of Malaria.—According to a statement of the state health officer, Dr. Samuel W. Welch, Montgomery, sixty-three malaria control projects are now under way in the state, as compared to one in 1917, and twelve in 1920. A tentative program for the work in 1922 has been decided on, in which the U. S. Public Health Service and the International Health Board will cooperate with the state. In addition, various communities will give financial aid.

ARKANSAS

Physician Wounded.—Dr. William E. Bone, Brookland, was recently shot through the right lung. Dr. Bone is in St. Bernard's Hospital, Jonesboro.

CALIFORNIA

Los Angeles County Medical Society.—The trustees of the association purchased a site, November 23, on which permanent quarters will be erected for the society.

Hospital News.—A unit, consisting of twenty-one beds, a new obstetric room, physicians' clean-up room, infant nursery and chart rooms, has been added to Loamshier Hospital, Santa Monica.——A drive which has been completed for the San Jose Hospital resulted in subscriptions of more than $170,000. This amount covers the requirements for site and building, and a new drive has been started to obtain funds for equipment.

DISTRICT OF COLUMBIA

Georgetown Medical School.—The president of Georgetown University has announced the names of four additional members of the faculty of the Georgetown University School of Medicine: Dr. Howard F. Strine, surgeon in the U. S. Navy, has been appointed associate professor of the principles and practice of surgery; Dr. Francis M. Munson, U. S. Army, retired, lecturer on prevention of diseases; Dr. Henry S. Bernton, lecturer on hygiene, and Dr. James A. Gannon, a graduate of the medical school class of 1906, associate professor of surgery.

GEORGIA

Personal.—Governor Harwick has announced the appointment of Dr. Marcus F. Carson, Griffin, as a member of the state board of medical examiners, to fill the vacancy caused by the recent death of Dr. Henry W. Terrell.

ILLINOIS

Hospital News.—The new $500,000 addition to the Evanston Hospital was opened for public inspection, December 3. The addition is built in the shape of a cross so that future additions may be made on the 4 acres of ground surrounding it. The original building was dedicated twenty years ago.

Chicago

Personal.—Dr. Emilius Clark Dudley has been given leave of absence from the Northwestern University Medical School to accept an invitation from Yale University to give a course in clinical surgical gynecology at the Hunan-Yale College of Medicine, Changsha, China. Dr. Dudley will sail from New York, December 10, and expects to return to Chicago, about July 1, 1922.

INDIANA

Conference on Mental Health.—Under the auspices of the Indiana Society for Mental Hygiene, of which Dr. William Lowe Bryan, president of the Indiana University School of Medicine, is president, the state conference on mental health will be held, December 15, at Indianapolis.

Hospital News.—As soon as plans can be drawn for additional buildings, the tuberculosis state hospital at Rockville will be enlarged and used for the ex-service men afflicted with tuberculosis. The state will provide buildings and medical care, while the federal government will meet the maintenance expense. The governor plans to erect at once a unit for the care of fifty men. Additional units will be added as needed. The U. S. Veterans' Bureau has also approved the plan for taking care of the insane among ex-service men at the Southern State Hospital at Evansville.

Campaign for Health Education.—Indiana University is continuing this year the health education campaign carried out last spring throughout the state at the instance of the state department of public instruction, with the primary purpose of interesting the people of the state in the employment of public health nurses, and with the additional aim of reaching high school girls, women's organizations and the general community in such a way as to encourage recognition of the importance of increasing the number of young women being trained for nursing service. By means of conferences, demonstrations of nursing procedure, exhibits on the care of children, and moving pictures the nurses make their work of practical value to the communities visited.

KANSAS

Personal.—Dr. Lot D. Mabie, Kansas City, member of the staff of Bethany Hospital, has been appointed federal physician for the eastern district of Kansas.

KENTUCKY

National Health Exposition.—Under the auspices of the U. S. Public Health Service, the state board of health of Kentucky, the board of health of Jefferson County, and the health department of the city of Louisville, a national health exposition will be held at the Jefferson County Armory, Louisville, Feb. 1-9, 1922. An institute will be conducted by the U. S. Public Health Service. The speakers will include: Dr. Milton J. Rosenau, dean of the Harvard School of Public Health, Boston; Dr. Josephine Baker, director of the Department of Child Hygiene, New York City Board of Health; Dr. Frederick R. Green, secretary of the Council on Health and Public Instruction, American Medical Association, Chicago; Dr. Valeria H. Parker, director of the Interdepartmental Board of Social Hygiene; Dr. Frankwood Williams, director of the National Association of Mental Hygiene, New York City; Dr. Watson S. Rankin, Raleigh, N. C., state health officer of North Carolina, and others.

LOUISIANA

Appropriation for Leper Colony.—An appropriation of $200,000 for the leper colony at Carville was included in the deficiency appropriation bill, which has passed the House and has been sent to the Senate for adoption.

Health Survey.—Dr. Mayo Toleman, of the Bureau of Municipal Research of New York, has begun a survey of the city board of health with the cooperation of Dr. John Callan, New Orleans, president of the board of health and other health officials.

MARYLAND

City Medical Society Meeting.—At the annual meeting of the Baltimore City Medical Society held, December 2, at Osler Hall, Medical and Chirurgical Faculty Building, Baltimore, Dr. Thomas B. Futcher was elected president; Dr. Alexius McGlannan, vice president; Dr. Frank Lynn, secretary, reelected, and Dr. Charles Emil Brack, treasurer.

Appointments at Johns Hopkins University.—The department of pharmacology in the Johns Hopkins University Medical Department has been subdivided to provide for carrying on a wider scope of work and a new division established, that of biophysics. The new division will be in charge of Dr. Jan Stephanus Van der Lingen, formerly senior lecturer in applied mathematics in the University of Cape Town, South Africa. No change in the department of pharmacology is anticipated, the division still being under the direction of Dr. John J. Abel, professor of pharmacology. Drs. Karl Schlaepfer and Ernst Huber, both of the University of Zurich, Switzerland, have been appointed associates in surgery and in anatomy, respectively, in the Medical School. Dr. James H. Mason Knox, Jr., associate in clinical pediatrics, has been granted a year's leave of absence to assume charge of child welfare work in Europe, under the Red Cross. During his absence, Dr. Daniel C. Wharton Smith, 2d, will fill his place.

MASSACHUSETTS

Personal.—The nominations of Dr. Joel E. Goldthwait, Boston, and Dr. Walter B. Cannon, Harvard Medical School, to serve in the Medical Reserve Corps of the U. S. Army, with the rank of brigadier general, have been confirmed by Congress.

Health Regulations.—Representative health officials from various sections of New England met in the health department office to reorganize a New England city and town milk council to prevent duplication of inspection of milk supplies and to work as a unit in enforcing compliance in regulation as to sanitation. The following governing board was elected: Health Commissioner Dr. William C. Woodward, Boston, chairman; Willard E. Ward, Brookline; Herbert E. Bowman, Somerville; Dr. Caleb Fuller, Providence, R. I., and F. L. Robertson, Springfield. The health authorities of Boston have announced that they will henceforth strictly enforce the regulation which requires that "show cases, shelves and other places where bakery products are sold shall be kept by the dealer well covered, properly ventilated, adequately protected from dust, flies and other contaminating matter and shall at all times be maintained in a sweet, clean and wholesome condition."

MICHIGAN

Head of Roosevelt Hospital Selected.—Dr. Albert N. Wehnkel, Detroit, for seven years consulting specialist on the board of health staff, has been selected as head of the Roosevelt American Legion Hospital at Camp Custer.

Clean Milk.—At the recent state conference of health officers in Lansing, Dr. Charles E. North, director of the North Public Health Bureau, New York City, in a lecture on milk inspection, offered as a solution for providing a community with pure milk, "Pay the farmer for his milk on the basis of freedom from bacteria." To produce acceptably clean milk, that is, milk with less than 50,000 bacteria per cubic centimeter of milk, Dr. North states that it is necessary: "To curry and brush the cows; to wipe the udder with a clean, damp cloth and to dry it with another; to wash and dry the hands before milking; to use a straight-fronted milk pail with not more than a 5-inch opening; to bring the pail close to the udder . . . to cool the milk immediately without straining; and to sterilize and dry thoroughly all milk utensils."

Harper Hospital's Diagnostic Clinic.—To aid the family physician in procuring expert assistance for his patients who need, but cannot afford to pay the fees of, specialists, a diagnostic clinic has recently been opened at the Harper Hospital, Detroit. It places within the reach of family physician and patient the entire facilities of Harper Hospital's staff and clinical department, laboratories, roentgen and dental departments, with a complete examination of the patient, including all special diagnostic work that the individual case may require. This is offered for the fee of $25 plus $3.50 a day during the patient's stay in the hospital. No patients are received except on recommendation of a reputable physician, who is urged to attend any examinations made of the patient. The family physician is furnished a complete written report of all examinations, treatments, results and recommendations when the patient is discharged. Two small wards accommodating four patients each are used. Any and every physician on the hospital staff may be called on to attend patients in the clinic, and every resource of the entire hospital is at the disposal of the physicians and nurses. A complete staff of interns and nurses is in charge of the clinic and on regular duty.

MISSOURI

Smallpox Epidemic.—Since September 1, ninety-one have died from smallpox in Kansas City. There have been 265 cases in the city since the epidemic started. Dr. James P. Leake, U. S. Public Health Service, Washington, D. C., has been sent to study the form of smallpox which is said to be unusually virulent.

NEW YORK

New Rochelle to Have New Hospital.—A campaign has been launched to raise $250,000 for the New Rochelle Hospital, which plans to erect a new hospital building. George E. Vincent, president of the Rockefeller Foundation, made the address which initiated the campaign.

Traffic Accidents.—The National Highways Protective Association has submitted a report including the period from Jan. 1, to Nov. 30, 1921, which shows that 1,741 persons were killed by automobiles and motor trucks in this state, as against 1,429 for the entire year of 1920. During the month of November 225 persons were killed by these causes in the state. In New York City sixty-six were killed by automobiles.

New York City

Harvey Society Lecture.—Dr. Clemens Pirquet, professor of pediatrics, University of Vienna, will deliver the third Harvey Society lecture at the New York Academy of Medicine, December 17. His subject will be "Nutrition Treatment of Tuberculosis in Childhood."

New York Hospital Opens Immunization Clinic.—A clinic for the treatment of hay-fever, eczema, asthma and poison ivy has been opened at the New York Hospital on Tuesday and Thursday evenings. Immunization against diphtheria and typhoid fever will also be administered.

Dr. Gibney Honored.—Dr. Virgil P. Gibney, who for fifty years has been surgeon in chief of the New York Hospital for Ruptured and Crippled Children, was honored by a testimonial dinner given by physicians associated with him in his work, at the Hotel Commodore on the evening of November 22, as an expression of appreciation of his long and faithful services.

New York Academy of Medicine Elects.—At the annual meeting of the New York Academy of Medicine held, Dec. 1, 1921, the following officers were elected for the ensuing year: vice president, three years, Dr. Arthur B. Duel; recording secretary, Dr. Royal S. Haynes; trustee, five years, Dr. Charles L. Dana. The term of the president, Dr. George David Stewart, has not yet expired.

Recruiting of Nurses Remedies Shortage.—The New York County Chapter of the American Red Cross has issued a statement announcing that its traveling recruiting service for nurses together with unemployment has in a large measure remedied the shortage of nurses which has existed in this city since the war. The report states that the nurses' training schools in the hospitals of the city, which had only half their complement of pupils last year, are filling up.

Food Poisoning Should Be Reported.—Physicians who meet cases in which a suspicion of food poisoning is justified are requested to report the facts to the department of health, so that the bureau of foods and drugs may make an investigation. In making this request the department of health points out that such illnesses are reportable in California and elsewhere and, as information accumulates as to their epidemiology, will doubtless become generally notifiable maladies.

Medical Society of the County of New York Elects.—At its one hundred and fifteenth annual meeting held, Nov. 28, 1921, the Medical Society of the County of New York elected the following officers for the ensuing year: president, Dr. Orrin S. Wightman; first vice president, Dr. Arthur F. Chace; second vice president, Dr. Eugene H. Pool; secretary, Dr. Daniel S. Dougherty; assistant secretary, Dr. John Milton Mabbott; treasurer, Dr. James Pedersen; assistant treasurer, Dr. William TenEyck Elmendorf.

Tuberculosis Meeting.—Under the auspices of the Association of Tuberculosis Clinics, a meeting was recently held at the New York Academy of Medicine: Dr. Lawrason Brown, Saranac Lake, spoke on the early diagnosis of tuberculosis; Dr. George Ornstein, Vanderbilt Clinic, Medical Department of Physicians and Surgeons, told of his practical experience with roentgen-ray work in tuberculosis and Dr. Louis I. Harris, director of the bureau of preventable diseases of New York City Department of Health, also spoke.

Society for Cinematographic Instruction in Medicine and Surgery.—The society, recently organized and incorporated, is devoted exclusively to the advancement of the science and art of medicine and allied subjects by means of cinematographic reproduction. At a meeting held, November 19, in New York City, the following officers were elected for the first term of office: president, Dr. James S. Edlin; vice presidents, Drs. Charlton Wallace and Rodriguez Ottolengui, D.D.S.; secretary, Dr. Alfred Kahn, and treasurer, Dr. Maximilian Lewson.

An Investigation of Malnutrition.—The bureau of educational experiments has recently made public a report entitled "Health Education and the Nutrition Class," or the results of three years' experiments with nutrition classes in a New York public school. The experiment was carried out at Public School No. 64 in East Ninth Street from February, 1918, to June, 1921. The experiment included 404 children, of which 104 were children of normal development used as controls. The main conclusions from the investigation are as follows: "Gain in fitness was greatest on the part of children supposedly well. Other conditions being equal, the better the initial physical status of the child the better the results obtained from improved conditions of regimen and home care. A very large percentage of children now considered physically fit are living on a plane of physical vigor considerably below their individual potentialities. Gain in fitness was greatest on the part of unusually bright children. A larger percentage of underweight was found among this group than among any other group studied. Except for this group of children with unusually high intelligence quotients, mental tests failed to reveal any significant differences between the underweight children studied and the normal children of control groups."

OHIO

Physician Appointed to Diplomatic Service.—Dr. J. Morton Howell, Dayton, has been appointed as diplomatic representative and consul general for the United States to Egypt, and sailed for Cairo early in November.

Hospital News.—The trustees of the Memorial Hospital, Freeport, have announced that the medical profession of the county may make free use of the hospital, and that the staff will be an open one for all time. The medical board chosen by the trustees will consist of thirteen members, three to be appointed each year. Three members will be chosen by the members of the Sandusky County Medical Society, and three by the directors together with the president of the board of trustees. The medical board will have charge of the professional work of the hospital but no physician or surgeon in good standing will be prevented from practice in the hospital. ——Dr. Benjamin R. McClellan of the McClellan Hospital, Xenia, has been made chairman of the Ohio committee of the American Legion on Hospitals, which is charged with the investigation of hospitals used for the care of disabled soldiers.——The children's section of the Franklin County Tuberculosis Hospital was opened for the admission of patients, October 31. The building will accommodate about 200 patients and was erected at a cost of $198,973.——The Fraternal Order of Eagles has given $500 for the equipment and complete furnishing of a room in the new Otis Hospital, Celina.——Directors of the Lakeside Hospital, Cleveland, are considering plans for a convalescent hospital and other hospital buildings. The site, a 200-acre tract of land on the lake shore, 2 miles north of Willoughby, has been donated by Edward S. Harkness of New York City, formerly of Cleveland.

PENNSYLVANIA

Special County Medical Meeting.—The Washington County Medical Society held a special meeting, November 9, at Washington, which was attended by members from the societies of Fayette, Greene and Westmoreland counties, physicians from Wheeling and Pittsburgh, and premedical students of Washington and Jefferson College. Dr. Harold A. Miller, Pittsburgh, delivered an address on the subject of obstetrics, followed by five reels of moving pictures of scenes in Dr. Wertheim's obstetric clinic in Vienna, Austria.

Philadelphia

State Aid Denied Seventeen Charities.—Seventeen Philadelphia institutions lose their state charitable appropriations for the current two years as a result of a ruling made by Auditor General Samuel S. Lewis, at Harrisburg. The institutions were adjudged to be sectarian.

Personal.—Dr. Charles J. Hatfield of the class of 1900, medical school, has been elected a member of the board of trustees of the University of Pennsylvania to succeed Dr. Morris J. Lewis.——Dr. Eugene L. Opie, professor of pathology at Washington University School of Medicine, St. Louis, addressed the annual conversational meeting of the Pathological Society of Philadelphia at the College of Physicians, December 8, his subject being "Latent Tuberculosis Infection and Its Relation to Phthisis."

SOUTH CAROLINA

Memorial Hospital Building Completed.—The Thompson Memorial Building of the Roper Hospital at Charleston has been completed, and will be known as the Riverside Infirmary. The old building will be remodeled and used as a nurses' home.

Plan to Record Hospital Births.—The executive committee of the state board of health has adopted a resolution making available for inspection of the state health officer, or his representative, records pertaining to births in all hospitals in South Carolina.

TENNESSEE

Hospital News.—The New Methodist Hospital at Memphis, which was recently opened to patients, has chosen Dr. Henry Hedden as superintendent. The hospital has 150 beds.

TEXAS

Surgical Instruments Found.—A package containing practically everything in the line of small surgical instruments was left in the office of Dr. J. W. Gooch, Shamrock, by a farmer who found them in the road near Shamrock. The owner should communicate with Dr. Gooch.

Advisory Board for Sanatorium.—The governor has appointed Dr. Zachary T. Scott, Austin; Dr. James W. McCarver, Brownwood, and Dr. William H. Hargis, San Antonio, members of the advisory board of the American Legion Memorial Sanatorium at Kerrville. They are ex-service members of the medical corps and will act in connection with the state board of control, which has authority over the Kerrville institution.

VIRGINIA

Personal.—It has recently been announced that Dr. Allen Fisk Voshell, former resident orthopedic surgeon at Johns Hopkins University, Baltimore, will assume charge of the department of orthopedic surgery at the University of Virginia Medical School and Hospital, Charlottesville.——Dr. William Edward Brown, former first assistant to the late director of the Catawba Sanatorium, Charlottesville, and connected with the tuberculosis work of the state board of health for the last five years, has been made superintendent of the Blue Ridge Sanatorium, the state institution for the care and treatment of tuberculosis, near Charlottesville. Dr. Brown succeeds Dr. Walter C. Klotz, who recently resigned to accept a similar position at Johnson City, Tenn.

WEST VIRGINIA

County Medical Meeting.—The Ohio Valley Medical Society held a meeting, November 18, at Wheeling. Dr. John Phillips, professor of medicine, Western Reserve University, Cleveland, and head of the medical division of the new Cleveland Clinic, spoke on "Some General Considerations in Diagnosis, Prognosis and Treatment of Nephritis."

WISCONSIN

Requirements for Registration of Nurses.—Answering a request from the state health officer for an interpretation of the residence requirement in the new Wisconsin law on registration of nurses, the attorney general of Wisconsin has advised that a specific residence period within the state is

unnecessary to satisfy the legal intent. The Committee on Nursing Education (created by the law) had made a rule that a nurse otherwise qualified for registration under the waiver provision should have resided six months in Wisconsin immediately preceding Sept. 1, 1921, to be entitled to register without examination. The opinion says: "Residence may be established by an adult at any place on the instant. When a person arrives at any place with the intent of making the same his or her permanent home, a legal residence is thereby established. We think that it is within the power of the committee to require that the nurse have a legal residence in Wisconsin at the time a certificate of registration is issued to her by the state board of health, but cannot require any length of residence prior thereto as a condition of obtaining the certificate."

CANADA

Western Ontario Academy of Medicine.—At a meeting held in the auditorium of the medical school, November 28, Dr. Edward Archibald, Montreal, delivered an address on "The Place of Surgery in Pulmonary Tuberculosis," and Dr. Joseph C. Bloodgood, Baltimore, spoke on "Cancer in Its Earliest Manifestations."

Ontario Medical Association.—The annual meeting of District 2 of the Ontario Medical Association was held recently at Woodstock, Ont. An interesting address was given by Dr. Charles White, Pittsburgh, director of tuberculosis at the Rockefeller Foundation Institute. Among the medical men present and who gave addresses were Edward R. Secord, Brantford; Henry F. MacKendrick, Galt; William Goldie, Toronto; John A. Marquis, Brantford; Arthur D. Proctor, Kitchener; Thomas A. Routley, Toronto, and Herbert Bruce, Toronto.

Public Health News.—Dr. George S. Cronk has recently been appointed medical officer of health for Belleville, Ont., succeeding Dr. Horace A. Yeomans, whose retirement follows a period of ill health. Dr. Cronk has been practicing in Belleville only since the war.——An alarming increase in the number of cases of diphtheria is shown in the November report of the provincial board of health. There are 940 cases of this disease throughout the province, as compared to fifty-five cases for the same month last year. The deaths from this disease have been eighty-two, as compared with forty-three deaths last year. The disease, officials say, is not so prevalent in Toronto as in outside centers. It is said to commence in a mild form in those it attacks, and later to increase in virulence.——Addressing the Canadian Conference on Public Welfare at Montreal recently, Dr. Clarence M. Hincks, Toronto, secretary of the National Committee for Mental Hygiene, declared that expert medical evidence in court is an absurdity under the present system. Dr. James C. McClelland of the Toronto General Hospital spoke on venereal diseases and quoted figures indicating that in the Montreal General Hospital in one year 26 per cent. of the patients were affected and that 5.7 per cent. of men for the Canadian army among the draftees were tainted. Dr. Robert E. Wodehouse, Toronto, secretary for the Canadian Association for the Prevention of Tuberculosis, traced the history of the disease and the methods used to combat it.

University of Toronto.—It is estimated that in the Faculty of Medicine, University of Toronto, fifty-five loans, totaling $10,535, have been recommended for the returned-soldier students of the faculty to enable them to continue their studies. The loans will be made from the University of Toronto Memorial Loan Fund.——Prof. William Bateson, eminent biologist, and director of the John Innes Horticultural Institution, England, is to deliver a series of five lectures entitled "Genetics and Heredity" in the medical building of the University of Toronto, in the early part of January. The lectures are open to the public.——Results are now coming from the generous gifts made by Sir John Eaton and the Rockefeller Foundation for the furtherance of the study of medicine at Toronto University. Sir Robert Falconer, speaking of the advantages already apparent, said recently: "These gifts have made possible the appointment of physicians and surgeons of established reputation who are now to devote almost all their time to the organization of medical education and the administration of the medical department in the Toronto General Hospital. This reorganization, so long desired, has already shown its superiority over the former system, and the change has also made possible the segregation for better treatment and more careful observation of patients suffering from similar diseases. This unification and coordination of all departments has naturally resulted in a more efficient organization both in the faculty of medicine and the General Hospital." The gift from Sir John Eaton amounts to half a million dollars spread over twenty years, and that from the Rockefeller Foundation is a million dollars.

GENERAL

Personal.—At the recent meeting in Kansas City of the National Anesthesia Research Society, in conjunction with the Mid-Western Association of Anaesthetists, a silver loving cup was presented to Dr. Arthur E. Guedel of Indianapolis, in recognition of his priority in gas anesthesia in obstetrics in America, and to encourage his further efforts in that line. Dr. Guedel has recently been appointed a member of the city board of health in Indianapolis.

Hospitals in Newfoundland and Labrador.—Dr. Joseph A. Andrews, who has recently returned to Santa Barbara, Calif., from his work with the International Grenfell Association, states that the association now has five hospitals on the shores of Newfoundland and western Labrador, and an orphanage was built at St. Anthony, on the north coast of Newfoundland, last summer. The work of the Grenfell Association is all done by volunteers which include men of high rank in the medical profession and medical students from leading universities.

Annual Meeting of the Federation of the American Society of Experimental Biology.—The American Physiological Society, the American Society of Biological Chemists, the American Society of Pharmacology and Experimental Therapeutics, and the American Society of Experimental Pathologists, which compose the Federation of the American Society of Experimental Biology, will meet in New Haven, Conn., December 28-30, under the auspices of Yale University. Dr. John J. R. McLeod of the University of Toronto, president of the American Physiological Society, is executive chairman of the federation meeting. The American Association of Anatomists will meet at the same date and place.

International Society of Medical Hydrology.—In accordance with resolutions passed at a conference in London, April 15, to form an international society for the promotion of the study and better knowledge of medical hydrology, a general meeting of the society was held in London, December 8, for the registration of members and the passing of the rules. The objects of the society are: (1) to encourage in all countries clinical and experimental research in medical hydrology; (2) to form an international union between scientific workers in this branch of medicine, and (3) to make better known, through the recognized organs of the medical profession, by periodic reports from time to time, the scope and nature of treatment by waters and baths in the prevention and cure of disease.

Resolutions of Mid-Western Association of Anesthetists.—THE JOURNAL has been requested to publish the following preambles and resolution, "unanimously adopted at the Mid-Western Association of Anesthetists meeting held in Kansas City, Mo., October 25":

WHEREAS, The Middle Western states are being circularized with false and misleading statements regarding the general practice of anesthesia and particularly the use of nitrous oxid-oxygen, and

WHEREAS, The Mid-Western Association of Anesthetists is formed for the study and promotion of truth as it relates to the specialty of anesthesia in medicine; now, therefore, be it

Resolved, That this society, in convention assembled, condemns the statements and the actions of Dr. J. F. Baldwin of Columbus, Ohio, in his utter disregard for truth and official records of recognized institutions as these relate to the practice of anesthesia and his efforts to discredit scientific advance by the unethical practice of disseminating false and misleading statements among medical, dental and hospital authorities throughout the United States.

RALPH M. WATERS, M.D., President,
Sioux City, Iowa.
MORRIS H. CLARK, Secretary,
Kansas City, Mo.

To Study Effect of Altitude on Human Life.—Eight investigators, five of them Harvard Medical School graduates and the other three British, sailed, November 16, for Peru, where they will make their headquarters at Cerro de Pasco, at a height of 14,000 feet in the Andes. The object of the expedition is to study the changes in the heart, circulation, respiration and chemical composition of the blood, which enable the permanent residents of Cerro de Pasco to live there in comfort and do arduous work in the copper mines, at an altitude in which most people would be able to do very little on account of the rarity of the air. The problem is also of

interest to aviators, who frequently suffer from the effects of flying at high altitudes. The Harvard members of the party are: Dr. Alfred C. Redfield, assistant professor of physiology, Harvard Medical School; Dr. Arlie B. Bock, Massachusetts General Hospital; Dr. Henry S. Forbes, now engaged in research in industrial medicine at Harvard; Dr. Carl A. L. Binger, Rockefeller Institute, New York City, and Dr. George Harrop, Presbyterian Hospital, New York City. The expedition was organized by Joseph Bancroft, Cambridge University, England, and he will also be accompanied by Prof. J. G. Meakins, Edinburgh University, Scotland, and Dr. Doggart of Kings College, Cambridge. They will return by February 1, and later in the year Mr. Bancroft will give a series of lectures at the Lowell Institute in Boston. The expedition is financed by Kings College, Cambridge, Royal Society of London, Carnegie Foundation, Rockefeller Institute, the Presbyterian Hospital, New York City, University of Toronto, Harvard Medical School, and certain private individuals who are interested in the problems to be investigated.

LATIN AMERICA

Vaccination in Chile.—The new Chilean vaccination regulations forbid travelers to enter or leave the country unless previously vaccinated.

Addition to Guatemala Hospital.—In connection with the celebration of the centenary of Guatemala independence, four operating rooms and five wards were added to the General Hospital of Guatemala City.

Infant Welfare in Chile.—The yearly budget of the society Patronato de la Infancia of Chile amounts to 600,000 pesos (about $80,000) for 1922. The society operates eleven milk stations, a diet kitchen and a maternity home.

New Journal in Cuba.—A new monthly, *Sanidad Militar*, has just begun publication in Havana. Its editor is Lieut.-Col. Horacio Ferrer, M. C., and its assistant editor, Capt. G. Silverio, M. C. It is well printed on good paper, and its first paper on venereal prophylaxis is cleverly and profusely illustrated.

Medicolegal Society Founded at S. Paulo.—The Sociedade de Medicina Legal e Criminologia, recently founded at S. Paulo, has a membership of physicians, lawyers and others to a total of 100. The officers elected include Dr. Alcantara Machado, president; Dr. Franco da Rocha, vice president, and Dr. O. Freire, secretary general. The "Archives" is to be in charge of Dr. J. B. de Souza and Dr. V. de Nascimento.

The Uruguay Medical Congress.—Among the resolutions adopted by the Second National Medical Congress, held at Montevideo in October, was one calling for a permanent committee to study the anthrax question. Another resolution commended introduction of chlorination for drinking water, and still another ratified the conclusion of the First Congress condensed into the phrase "War on alcohol." The next congress is to be held at Montevideo in 1925.

Santo Tomás Hospital.—Four of the new buildings of the Santo Tomás Hospital at Panamá City are approaching completion. The hospital was begun two years ago and it will probably be finished in 1923. It will have room for 700 patients, which can be increased to 900 in emergencies. There will be maternity, isolation, tuberculosis, venereal, clinical and surgical wards, besides a well equipped laboratory. The hospital will face Balboa Square, in which there will be erected a statue of the famous discoverer by the Spanish sculptor, Benlliure.

Isolation for Contagious Diseases at Rio de Janeiro.—The *Brazil-Medico* makes a scathing arraignment of conditions in the isolation hospitals at Rio, the S. Sebastião and the Jurujuba, stating that soldiers taken recently to the former for isolation on account of epidemic meningitis contracted smallpox there. An official complaint to this effect has just been presented by the army authorities to the chief of the public health service. The editorial relates further that in the last few months fifteen persons taken from ships as influenza suspects and interned at Jurujuba contracted smallpox in the isolation hospital. The editorial states that these facts are so grave and reflect so seriously on those responsible for this state of affairs that it was only after much hesitation that they are published. It is the more inexcusable, it adds, because the public health service at present almost has carte blanche in the matter of expenditures.

Personal.—Dr. Jorge del Toro, a prominent surgeon of San Juan, P. R., is seriously ill with pneumonia in New York.——Dr. Miguel Villacencio, Lima, Peru, is now, with his wife, in New York, where he represented his country at the recent meeting of the American Public Health Association.—Dr. Gustavo Cuervo of Havana is now in New York on his way from Europe.——Dr. Aurelio Beraun, a prominent Peruvian physician, has returned to his country with his wife, after visting Eastern cities.——Dr. Rosendo Amor, professor of surgical therapeutics in the school of medicine of Mexico, has resigned his position.——Dr. R. Andino Aguilar, Tegucigalpa, Honduras, has moved his residence to Paris. ——Dr. Enrique Yániz, superintendent of Sagua Hospital, Sagua, Cuba, has resigned.——Dr. Diego Carbonell, Venezuelan minister to Brazil, has been appointed a member of the Academia Nacional de Medicina of Rio de Janeiro, Brazil, to replace the late Dr. Aguerrevere.

FOREIGN

South African Medical Congress.—The Seventeenth South African Medical Congress was held, October 10-15, at Cape Town.

Celebration of Birthday of German Pathologist.—The centennial anniversary of the birth of the late Dr. Rudolf Virchow was celebrated, October 13, at the Pathologic Institute of the Tokyo Imperial University. Speeches were made in review of Dr. Virchow's achievements in pathology by Prof. K. Fujinami and R. Koganei. The German ambassador, Dr. Solf, was present.

Public Health in Australasia.—The first annual meeting of the public health association of Australasia was held, September 7-10, at Melbourne. New Zealand and every Australasian state, except one, were represented. Greetings were sent to the American Public Health Association, which was preparing for the celebration of the fiftieth anniversary of its existence.

Prize for Antoni.—The docent of neurology at the Karolinska Mediko-Kirurgiska Institut at Stockholm, Dr. N. Antoni, has been awarded the Lennmalm prize for 1921 by the Swedish Medical Association. He has published a number of works on clinical neurology, including his recent monograph on spinal cord tumors and neurofibromas, based on twenty neurofibromas and ten endotheliomas, studied from the clinical, embryologic and anatomic standpoints.

Semicentennial of Netherlands Neurologic Association.—The Nederlandsche Vereeniging voor Psychiatrie en Neurologie celebrated in November the fiftieth anniversary of its foundation with a gala meeting at Amsterdam. The president, Prof. L. Bouman, reviewed the history of the society, and Jelgersma and Winkler the development of psychiatry and neurology in the last fifty years. The Adrian medal was awarded and honorary members elected, but the details have not yet been received.

French Congress "de la Natalité."—This third three-day congress was held recently at Bordeaux, the minister of hygiene presiding. These annual meetings are due mainly to the initiative of the chambers of commerce, but they aim to "study and promote the principal social, moral, religious, fiscal, legislative and hygienic measures which are likely to preserve intact the human capital necessary for the development and safety of the country." The medical profession always takes a leading part in them. One of the measures advocated is that nursing mothers should be paid a pension so that they will not have to go to work but can stay home, like a paid wetnurse, for the infant. Other measures to promote breast nursing have proved failures.

Health Center for Tokyo.—Dr. R. B. Teusler, director of St. Luke's international hospital at Tokyo, is visiting America for the purpose of interesting American physicians in a project to establish a health center in Tokyo such as exists in all cities of the United States and Europe. The Japanese capital has no institution of this sort, and it is proposed to make St. Luke's hospital the nucleus of an establishment which shall include a hospital of 250 beds; a training school for 150 Japanese nurses; a postgraduate department for training Japanese interns and for medical research work; a public welfare and health department to include medical social service, and a medical library for American and British medical literature and magazines. A million dollars will be needed to establish the proposed health center in Tokyo.

Training of Health Visitors in Poland.—As an outgrowth of the immediate need for trained Polish workers to assist in carrying out the child health work as it will be demonstrated in the health centers and ambulatoriums opened in various

parts of Poland by the American Red Cross, there has been established at the University of Krakow a short course in training for health visitors. Arrangements were made with the medical faculty of the University of Krakow whereby several of the physicians on the staff of the children's department agreed to give a series of lectures and conduct demonstrations in ambulatoriums and hospitals connected with the university. Three American nurses (two speaking Polish) and one trained social worker were detailed to give instruction and conduct classes in practical work in connection with the Red Cross milk dispensing station, the ambulatorium, and in home visiting. The course was originally planned to extend over a period of six months, the entire time being spent in Krakow, but it was found that it was possible to complete the didactic work within a period of four months and to have the pupils spend the last two months in the field under supervision.

CORRECTION

American Public Health Association Meeting.—In the report of the American Public Health Association meeting which appeared in The Journal, November 26, p. 1746, two groups of narcotic addicts were described. A third group, for which control is unnecessary, was inadvertently omitted. The report should read: "Furthermore, the group of addicts in whom the clinical condition, which was the reason for beginning the drug, no longer exists, or who began the addiction for other than clinical reasons, is also a medical problem. These three groups, which include all addicts, do not constitute a public health problem in the ordinary sense of the word."

Government Services

Public Health Service Opens New Hospitals

Three new hospitals will be opened by January 1 under the direction of the U. S. Public Health Service. These hospitals are at Fort Logan H. Roots, Little Rock, Ark.; Fort McKenzie, at Sheridan, Wyo., and the former Navy Hospital at Las Animas, Colo. This makes seventeen hospitals which have been opened by the service during the present year. All have either been leased from private owners or taken over from the Army and Navy, the new construction authorized by Congress not yet being well under way. Hospitals put in commission during the last three months are the Navy Hospital at Gulfport, Miss., with 150 beds; the hospitals at Jackson Park, Chicago, Colfax, Iowa, and Portland, Ore., with a total of 350 beds; and the Edward Hines, Jr., Hospital at Maywood, near Chicago, with 1,000 beds. These hospitals will increase the total capacity of Public Health Service hospitals to about 22,600 beds. Hospitals planned to be opened during 1922 include the tuberculosis hospitals at Dawson Springs, Ky.; Excelsior Springs, Mo.; Rutland, Mass.; Fort Walla Walla, Wash.; Norfolk, Va., and the Bronx, New York City.

Assignments of Medical Reserve Officers

As a result of the issuance of regulations of the Officers' Reserve Corps, assignment of officers is being made in the Medical Department of the Army. These assignments with various units are under authority of the various commanders of the corps areas, and when completed will result in a system whereby every medical reserve officer will have a post to fill immediately on being called into active duty. All of these assignments are made to paper units, but in case of war these units will rapidly be turned into real organizations. A large number of medical reserve officers are retained by the Surgeon General of the Army to be used at base hospitals.

Assignment in Naval Medical Corps

Capt. Frank E. McCullough, Medical Corps, U. S. Navy, has been assigned as inspector of naval hospitals, having been relieved from duty as assistant in the Bureau of Medicine and Surgery, Navy Department, Washington, D. C., by Capt. Frank L. Pleadwell, Medical Corps, U. S. Navy, who was recently in charge of the division of publications of the bureau.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 7, 1921.

Society for Birth Control

A society entitled the "Society for Constructive Birth Control and Racial Progress" has been formed. The president is Dr. Marie Stopes (the author of a book on the subject). Among the vice presidents are several leading members of the profession, including Sir Arbuthnot Lane, Sir James Barr and Sir Arcndall Reid. The objects of the society are: (*a*) to bring home to all the fundamental nature of the reforms involved in the conscious and constructive control of conception and the illumination of sex life as a basis of racial progress; (*b*) to consider the individual, national, international, racial, political, economic, scientific, spiritual and other aspects of the theme, for whch purpose meetings will be held, publications issued, and research committees, commissions of inquiry and other activities will be organized; (*c*) to supply all who still need it with the full knowledge of sound physiologic methods of control.

A New Species of Fossil Man

Considerable interest has been aroused by the discovery in the "bone cave" at Broken Hill Mine, northern Rhodesia, of a fossil skull, which reveals a new chapter in the history of man. The bone cave is already famous for the beauty of its stalactites and stalagmites and the remarkable fact that the lime of which they were originally composed has been largely replaced by zinc and lead phosphates. Hence its value for mining, which proved very peculiar, for the floor was a mass of fossilized remains of elephants, lions, leopards, rhinoceroses, hippopotami, antelopes, birds, bats and small mammals. Many hundred tons of these animals have been removed during mining operations, but no trace of man was discovered until a depth of 60 feet below water level was reached, when the bones of a remarkable type were found surrounded by soft lead conglomerate. G. Elliot Smith, professor of anatomy in the University of London, who has examined the remains, declares that the skull is of a type of mankind new to science. Comparing it with the skull of *Pithecanthropus erectus* found in Java by Dubois in 1892, the most primitive type of human remains known, he finds that the African skull presents certain resemblances, especially in the general form of the great eyebrow ridges, the flatness of the skull, and its broadness at the back. The face also presents some resemblance to that of Neanderthal man, though it is of a more primitive type. Anthropologists have supposed that European man came from Africa. Smith suggests that this newly discovered skull may represent the ancestral form from which Neanderthal man sprang. The upper part of the face is flat, somewhat like that of the apes. Although bigger than the Java skull and probably of a higher form, it presents so remarkable a likeness to this that it may be of the same genus. A striking feature is the enormous impression of the cervical muscles on the back of the skull. The creature must have had a tremendously thick and powerful neck, much more powerful than any other fossil skulls suggest. Another remarkable feature is that some of the teeth are affected with dental caries, a most surprising thing, for in modern man, dental caries is comparatively recent and does not date back long before the time of the pyramids. Unfortunately, owing to blasting operations, the lower jaw is missing. The other remains found were fragments of the femora, which will have to be investigated carefully before any inferences can be drawn.

Commenting on the discovery, Sir Arthur Keith says that one important matter—the age of the geological deposit in which the bones were found—has not been mentioned. He thinks that we are dealing with an early or late Pliocene fauna, of the age of Piltdown man. The skull was not unexpected. It shows that, as he has suggested, in ancient times the world was covered by very diverse races of man, that it was a patchwork of different species or genera. The skull fills in the gap between the Neanderthal and the Java man. Sir Arthur Keith thinks that South Africa will turn out to be a mausoleum of remains, for this is the second important find within ten years: the first was the Boskop skull. He cannot help thinking that South Africa is a very ancient center for the production of man. The Hottentots today are far away the most peculiar people on the face of the earth, and their cousins, the Bushmen, are also peculiar.

Decline of Lunacy During the War

A report of the London County Council, just issued, shows that the number of lunatics under reception orders declined from 215,139 in 1915 to 17,226 in 1919. This large reduction was due to the high death rate during the interval of four years, and prevailed also in the asylums of England and Wales and is attributable to war conditions. Three of the London mental hospitals were converted into war hospitals, which led to overcrowding in the remaining seven. This was not conducive to health. In common with the rest of the population, the patients suffered from scarcity of suitable food. A further cause was a reduction in the number of admissions. This was partly explained by limitation of admissions to urgent cases. But there was a more potent reason. Though the nation was suffering all the agonies of the greatest war in history, there was a remarkable absence of those stresses connected with poverty to which the mentally unstable react. There was practically no unemployment, and wages were good. Persons of poor mentality, who in normal times would have been a drug on the market, were eagerly sought after by employers (if not absorbed into the army). The number of lunatics in 1920 showed an increase of seventy.

PARIS

(From Our Regular Correspondent)

Nov. 11, 1921.

Antianaphylaxis

Antianaphylaxis was the subject of an important communication presented by Dr. F. Widal, professor of clinical medicine in the University of Paris, with the collaboration of Drs. P. Abrami and Pasteur-Vallery-Radot, at the fifteenth French congress of medicine, recently held in Strasbourg. The essayist laid particular stress on the complexity of the mechanism of anaphylactic accidents. Disturbances noted in subjects suffering from such are so variable, and the sensitization is effected in so many ways, that the effectiveness of various antianaphylactic processes is subject to a considerable amount of variation. In combating a pathogenic mechanism of such complexity, the methods of antianaphylaxis cannot pretend to possess the efficacy and uniformity of a specific therapy such as attaches to serum treatment. Widal and his pupils, as we know, designated the physical process, of which the shock is the expression, by a new term, "colloidoclasis." They comprehend under this term the rupture of the physical equilibrium of the colloids of the organism. But, when we endeavor to define the mechanism of this colloidoclasis, we encounter a great many difficulties. Kopaczewski and also Auguste Lumière endeavor to explain this rupture of the colloids by a special process called "flocculation." The term flocculation signifies the formation, in a colloidal solution, of floccules, resulting from the coalescence of particles into a voluminous mass. In order that they may produce the effects of shock attributed to them by Kopaczewski and by Lumière, and in order that they may obliterate by embolism the pulmonary capillaries, or mechanically irritate the endothelium of cerebral vessels, the floccules formed, during shock, in the blood of experimental animals must be of a material and discernible nature. In experiments carried out by Kopaczewski, in which, going back to the study of the Bordet phenomenon, he brings guinea-pig serum and gelose in contact in vitro, he witnessed the appearance in the serum of large flocculent masses, which were plainly visible with the ultramicroscope and were afterward shown kinetographically on the screen. Thus we must incriminate a phenomenon similar to that which is produced in vitro in order to conform with the theory of shock by contact or mechanical shock as held by Kopaczewski. If we accept Lumière's theory, we may also expect to find voluminous floccules in the plasma of organisms in a state of shock, for he explains the phenomenon by the mechanical action that floccules exert on the walls of vessels. However —and here we face a surprising fact—the flocculation that we can witness and produce in vitro, no one thus far has been able to discover in the blood of animals during shock. Lumière admits having sought for it in vain. Widal, during microscopic examination of serums and plasmas taken during anaphylactic, peptonic and arsphenamin shock, has never observed flocculation. Thus, while the theories are based entirely on the hypothesis of a flocculation of the colloids of the blood plasma, this flocculation, which we ought first of all to discover, remains indiscernible. On the other hand, though the substances studied by Kopaczewski do produce in vitro a diminution of surface tension or an increase in the viscosity of serums to which they are added, is it certain that in vivo, with the given doses, they exert the same effects? Camphorated oil, which, to judge from Kopaczewski's finding in regard to its action in vitro on surface tension, might be expected to exercise a strong prophylactic influence on neo-arsphenamin shock, was shown by experiments conducted by Widal, with the collaboration of Joltrain and Bénard, to have no effect whatever. The subcutaneous injection of 0.15 gm. (2⅓ grains) of camphorated oil thirty minutes before an intravenous injection of neo-arsphenamin did not prevent, in three experimental subjects, the hemoclastic crisis or the clinical manifestations of shock, whereas sodium carbonate and sodium chlorid proved efficacious.

Seventh Centenary of the School of Medicine of Montpellier

The city of Montpellier recently celebrated the seventh centenary of its school of medicine. Amidst the sound of cathedral and other church bells of the city, the president of the republic, preceded by mace bearers in medieval costumes, and followed by the minister of public instruction and the dean of the school of medicine, made his entry into the principal court of the old school. In this court, transformed for the occasion into an amphitheater, the centenary ceremonies were celebrated. Dr. Derrien, dean of the medical school, delivered the opening address. Then two papers on "Seven Centuries of Medicine in Montpellier" and "Seven Centuries of Surgery in Montpellier" were read by Professor Vires and Prof. Emile Forgue, respectively. Dr. Fernand Widal paid homage to Montpellier in behalf of the medical profession of France. Professor Bordet, the Belgian scientist, spoke in behalf of foreign universities, and then the representatives of the various foreign universities deposited in written form with the dean of the school their official compliments and congratulations. On the occasion of this celebration, a monument to the memory of Rabelais was unveiled in Montpellier; for the famous author of Pantagruel,

before becoming a writer, studied medicine here, he having been registered in September, 1530. In 1537 he received his title of doctor of medicine. For a long time after his death, the school preserved his cap and robe. The writings of Rabelais teem with reminiscences of his medical life, and Montpellier comes in for frequent mention.

BELGIUM

(From Our Regular Correspondent)

LIÉGE, Nov. 7, 1921.

Prophylaxis in Schools

I. MEDICAL INSPECTION

In previous letters I have referred to the regulations in regard to the medical inspection of schools that were recently adopted in Belgium as the result of a royal decree following proposals made by Monsieur Destrée, minister of arts and sciences. The minimal requirements of such inspection are: (1) an examination of children on entering school for the first time, and an annual examination throughout their school life; (2) a more frequent examination of pupils who, in the opinion of the medical inspector, need to be subjected to special surveillance, and also those to whom his attention is directed by the instructors or the school nurse; (3) in case of an epidemic in the locality, the strict enforcement of prophylactic measures within the school; (4) inspection of the plumbing (and of shower baths where there are such) on the occasion of every visit; (5) semiannual general inspection of school buildings, furniture and outbuildings. Medical inspection of schools does not include affections already diagnosed.

II. DISEASES OF CHILDREN

In addition, a set of special instructions to be observed by teachers was adopted. 1. The teacher must send home, in the company of some one, any child who appears seriously ill. When a pupil has been dismissed, or is absent, on account of illness, the teacher or the principal will inquire, without delay, of the parents the nature of the affection from which the child is suffering. 2. If the teachers or pupils are suffering from a contagious disease or there are cases of such disease in the family, they may not be admitted to the school without a certificate from the attending physician attesting that they present no danger as regards transmission of infection. This certificate must also specify: In cases of diphtheria, that two bacteriologic examinations of the throat secretions, with an interval of a week between, showed negative results, and that the necessary measures for disinfection have been taken in the patient's home; for smallpox, that all crusts have fallen and that the throat conditions have completely cleared up; in scarlet fever, that the period of desquamation has passed, that the throat is intact, that the child has been given a soapy bath and that disinfection has been effected; in measles, that a soapy full bath has been given the child, and that he no longer presents any suspicious signs; in mumps, that a period of twenty days has elapsed since the onset of the affection, and that the child is free from all signs of the disease; in whooping cough, that a period of three weeks has elapsed since the disappearance of characteristic attacks of coughing; in chickenpox, that all scabs have disappeared and that a full bath or a soapy wash-off, including also the scalp, has been given the child; in typhoid fever, that the child has received a thorough soapy bath since his recovery, or has been given a general soapy wash-off; in cerebrospinal meningitis, that a period of forty days has elapsed since recovery or that two separate and distinct bacteriologic examinations, a week apart, have established the absence of meningococci in the nasopharyngeal secretions; in ringworm (trichophytosis) of the scalp, that careful and repeated microscopic examinations do not reveal either in the hairs or the scales (if there are such) the least trace of spores or mycelium; in scabies, that the parasite and its eggs have been destroyed and that a careful examination does not reveal suspicious symptoms, more especially, burrows; in true impetigo, that all traces of pustules or scabs have disappeared; in trachoma or granular ophthalmia, that suppuration has ceased, and in tuberculosis that there are no longer any signs of open lesions.

III. INDIRECT INFECTION AND MEASURES FOR ITS CONTROL

Measures against indirect infection were also adopted. Brothers and sisters of a patient suffering from an infectious disease, and also other children living in the same house, will not be admitted to the school except as they present a medical certificate testifying: in diphtheria, that ten days have elapsed since the isolation of the patient, that disinfection has been effected during the course of the disease and that two bacteriologic examinations of the secretions, made ten days apart and since the isolation of the patient, gave negative results; in smallpox, that isolation of the patient is complete, that disinfection of his clothing and the home has been effected with all necessary care following isolation, that the children in question have been revaccinated, and that a period of at least ten days has elapsed since the action was taken; in scarlet fever, that a period of two weeks has elapsed since the isolation of the patient, that disinfection has been carried out during the course of the disease, and that the throats of the children do not present any suspicious signs; in measles, that a period of two weeks has elapsed since the isolation of the patient; in mumps, that fifteen days have elapsed since the isolation of the patient and that the children do not present any suspicious signs; in whooping cough, that fifteen days have elapsed since the isolation of the patient, and that the children have no catarrhal affection of the respiratory tracts; in cerebrospinal meningitis, that twenty-eight days have elapsed since the isolation of the patient, and that disinfection has been carried out during the course of the disease; in addition, in the case of children in whom meningococci have been demonstrated, that two bacteriologic examinations, made a week apart, of the secretions of the throat, etc., have not revealed the presence of meningococci.

IV. TEMPORARY CLOSING OF SCHOOLS IN CASE OF AN EPIDEMIC

Whether a school should be closed or not will depend on the extent of the epidemic and the gravity of the disease. In measles, closing will seldom be indicated. The closing of a school accomplishes its purpose only when promptly carried out during the four or five days following the diagnosis of the first case. If the prevalent disease is of an especially grave character, it may be necessary to close the schools, or at least the classes attended by children between the ages of 3 and 6, in whom measles is always more grave than in older children. The school should ordinarily be reopened fifteen days from the date of closing. In scarlet fever, the closing is often opportune when a number of cases have been reported and the disease is not already scattered throughout the community or the section of the town where the school is located. The reopening may usually take place fifteen days after the closing. In diphtheria, the closing will be ordered as in scarlet fever. The reopening of the school will take place three weeks after closing. As for typhoid fever, this disease may necessitate the closing of boarding schools, provided a sufficient number of cases occur in quick succession. The reopening of the school will take place after a visit of the sanitary inspector, followed by his

approval of such action. In cerebrospinal meningitis, the closing of school would be indicated if several cases had occurred among the pupils or if an epidemic were prevalent in the locality, or the part of the town in which the school is located. In such a case the school should not be reopened until authorization from the sanitary inspector has been secured.

BERLIN

(From Our Regular Correspondent)

Nov. 10, 1921.

Physiologic Findings in Connection with Sport Activities

When compulsory military service ceased to exist, it became necessary to discover in place of it something that would present, at least approximately, the same hygienic advantages. For this reason, the "Deutsche Hochschule für Leibesübungen" (a university school of physical training) was established in Berlin, two years ago, under the general direction of the Berlin surgeon Professor Bier. In order that this university school may not only train athletic directors and athletes, who are recruited mainly from the student ranks, but also contribute to the progress of science, a physiologic laboratory specially equipped to conduct experiments in connection with various sports has been added, in which Dr. Kohlrausch, assistant in the Physiologic Institute, is carrying out certain investigations. From his recent report it appears that, last winter, investigations on blood pressure during and after certain sport activities were made. The blood pressure values observed in ski-runners were different from those noted by other investigators and seemed to indicate that the changes in blood pressure immediately after such sport activities are very great. Several series of investigations were carried out, in which this method was used: The blood pressure was measured soon after completion of some sport activity requiring a maximum of exertion and was then noted at intervals of from two to ten minutes for a period ranging from one-half hour to an hour and a half. It was thus seen that the blood pressure shortly after the completion of the activity was very high, and in some cases continued to rise. However, after an interval of from one half to three minutes it began to fall, and in the course of from ten to fifteen minutes it sank way below normal, and did not get back to normal for from one half to one and a half hours. The shorter the duration of the effort, the more quickly the blood pressure fell and rose again, and the greater was the fluctuation. Long continued exertions did not produce the same high (or low) blood pressure records, and the return to normal was found to be slower.

For example, in the 100 meter dash, the blood pressure of the runner before the exertion was 113 mm. of mercury; afterward, 189 mm.; sixteen minutes later, 71 mm.; fifty minutes later, 112 mm. In the 1,000 meter run, the blood pressure prior to the run was 119 mm.; afterward, 145 mm.; twenty minutes later, 89 mm.; seventy minutes later, 119 mm. A scientific explanation of the manifestations cannot be attempted here, but suffice it to state that they are not due mainly to fatigue but that it is a question of physiologic circulatory phenomena. The results of the figures secured in fifty series of investigations have some importance from the standpoint of pathology. The attempt was made to bring the conditions surrounding sport activities into some sort of relation with clinical pathology, which attempt promises to be successful, since the demands that the various forms of sport make on the normal human organs are at least equal to the demands made by the affairs of daily life on diseased organs. That so few scientific investigators make use of the opportunity for experimental observation offered by sport activities is doubtless due to ignorance of the conditions prevailing in this field. One form of experimental physiologic research was the determination of the muscular elasticity under various circumstances. The proposed testing of the effect of massage on athletes was postponed until a later season, as special attention had been called to the differences in elasticity in the muscles of light-weight and heavy-weight athletes. It was found, above all, that the musculature of a number of athletes was harder than that of light-weight athletes. The muscles of the calves of the legs, especially, were tested. It was further shown that the muscles after the 10 kilometer run at a moderate pace were surprisingly soft, whereas during the following days they became much harder. But in the 100 meter dash it was different, for here the hardness of the muscles was noted at once. In the case of the moderate, 10 kilometer run it was a question of holding the muscles sufficiently taut to protect them against the pain caused by the dissemination of fatigue substances; in the case of the short, quick run it was a matter of muscular spasm or tonic tension. Through observations on swimmers and runners it was shown that in the various forms of sport different types of breathing may be noted.

Attendance at German Universities

During the summer semester of 1920, the number of students attending German universities was not materially less than during the previous winter semester. In the winter semester, 1920-1921, there was a slight increase of attendance. With the omission of Königsberg, there were 84,837 students in attendance during the winter semester, 1920-1921, as compared with 84,142 matriculated in the summer semester. The university of Berlin has about 12,500 students. The universities of Munich, Leipzig, Breslau and Bonn have more than 5,000 each. Cologne has 4,000; Münster, Frankfort, Würzburg, Halle, Hamburg, Göttingen and Freiburg over 3,000; Tübingen, Heidelberg, Marburg, Jena over 2,000, and Kiel, Erlangen, Greifswald and Rostock, between 1,000 and 2,000 students this year.

Death of Wilhelm Heinrich Erb

Wilhelm Erb, the senior representative of German neurologists and the former director of the Heidelberg Neurologic Clinic, died, November 1, at the age of 81. His name is well known in the field of investigations on the spinal cord. But also in other branches of neuropathology he conducted important researches. His numerous works deal with progressive muscular dystrophy, pseudoparalytic myasthenia, spastic spinal paralysis, acromegaly, dysbasia angiosclerotica (a term he invented) and many other disease conditions. For many years he defended the conception that tabes dorsalis rests on a syphilitic basis. He championed this view against the opposing belief of Leyden, more particularly. With the advent of the Wassermann test, whereby it became possible to establish with certainty the presence of syphilitic affections, the controversy was definitely decided in Erb's favor. At approximately the same time as Westphal, he discovered the significance of the knee tendon phenomenon. Not only as an investigator, but also as a clinician and consulting physician, he was distinguished among a large circle of clients, including many from foreign countries, for his reliability and thoroughness. To the superficial observer he seemed austere in his manner and at times even gruff. But those who learned to know him well soon grew to like him for his upright, irreproachable character and his depth of feeling. In recent years he found it difficult to bear up and to preserve his strength of character in the face of the severe misfortunes that overtook him. His two eldest sons, one of whom had distinguished himself by his excellent experimental researches in medicine, died some time ago, one having committed suicide, while the other fell on the field of battle.

Marriages

WILLIAM O. NELSON, Lieut., M. C., U. S. Army, Baldwyn, Miss., to Miss Alma Holly of Booneville, Miss., October 23.

FREDERICK S. HARRELL, Olney, Texas, to Mrs. Sallye D. Harle of Malta, Mont., at Wichita Falls, November 23.

ALLEN FISKE VOSHELL, Charlottsville, Va., to Miss Louise de Lancey Barclay of Baltimore, November 24.

CHARLES DOUGLASS WALTON to Miss Louise Elizabeth Orr, both of Mount Pleasant, Tenn., November 16.

GEORGE REED TABOR, Oklahoma City, to Miss Jessie Kirk Wainwright of Jackson, Miss., November 4.

RALPH BOWMAN EARP, Eldorado, Kan., to Miss Frances Davenport of Arcadia, Kan., October 19.

MARCUS ROLLA DAMRON, Pinckneyville, Ill., to Miss Elizabeth Sandlin, in St. Louis, November 1.

DUDLEY PAUL FAGERSTROM, Boone, Iowa, to Miss Deane Whitbred of St. Paul, November 17.

RALPH EMERSON MCINDOO to Miss Phronsie Lucille Martin, both of Kokomo, Ind., October 15.

EMERSON BARNUM, Shelbyville, Ind., to Miss Pearl M. Coers of Manila, Ind., October 6.

STEPHEN W. STAFFORD to Miss Marie Aurore Tircuit, both of New Orleans, November 24.

JOSEPH ADJUTOR RUEL to Miss Corinne Foisy, both of Haverhill, Mass., November 10.

OLIVER CURRY BRUNK, Richmond, Va., to Miss Bernice Hall of Lynchburg, October 25.

Deaths

Walter Channing ⊕ Brookline, Mass.; Medical School of Harvard University, Boston, 1872; died, November 23, aged 72; superintendent of the Channing sanatorium for the treatment of mental diseases, near Brookline; professor of mental diseases, Tufts College Medical School, Boston, 1895-1903; chairman of the board of trustees, Boston State Hospital, 1908-1914. He was a member of the American Neurological Association; American Medico-Psychological Association and the New England Society of Psychiatry.

James Milton Spear, Cumberland, Md.; Miami Medical College, Cincinnati, 1869; member of the Medical and Chirurgical Faculty of Maryland; former president of the Allegany County Medical Society; chief surgeon of the Baltimore and Ohio Railroad, Cumberland, for twenty-five years; Civil War veteran; died, November 17, from heart disease, aged 78.

James Lee Reat, Tuscola, Ill.; Eclectic Medical College, Cincinnati, 1858; Rush Medical College, Chicago, 1877; member of the Illinois State Medical Society; surgeon in the Civil War; practitioner for more than half a century; member of the Douglas County board of medical pension examiners for twenty-seven years; died, November 26, aged 86.

Henry Walker Terrell ⊕ LaGrange, Ga.; Atlanta Medical College, Atlanta, 1892; vice president, Medical Association of Georgia; served on the LaGrange board of education; member of the Georgia State Board of Medical Examiners; died, November 24, from angina pectoris, aged 50.

Irvine Moore Flinn, Wilmington, Del.; Jefferson Medical College, Philadelphia, 1883; Hahnemann Medical College and Hospital of Philadelphia, 1887; chief of medical staff, Homeopathic Hospital, Wilmington; died suddenly, November 22, from acute indigestion and heart disease, aged 67.

Edward August Bogue ⊕ New York City; Castleton Medical College, Castleton, Vt., 1857; also a dentist; member of the New York Academy of Medicine and former president of the New York Odontological Society; died, November 22, from pneumonia, aged 83.

William Porter ⊕ St. Louis; Jefferson Medical College, Philadelphia, 1872; member of the Missouri State Medical Association; former professor of clinical medicine, St. Louis University; died, November 13, at Ocean Springs, Miss., from acute indigestion, aged 69.

B. Lawrence Taliaferro ⊕ Catawba Sanatorium, Va.; Medical College of Virginia, Richmond, 1898; chief physician of Catawba Sanatorium; at one time on the staff of the Trudeau Sanatorium, Saranac Lake, N. Y.; died, November 21, at Roanoke, aged 45.

Robert Joseph Baze, Chickasha, Okla.; Memphis Hospital Medical College, Memphis, Tenn., 1892; member of the Oklahoma State Medical Association; founder of the Baze Sanatorium, of which he was surgeon in charge; died, November 14, aged 51.

Lewis Holston Hendrixson, New Holland, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1899; former associate professor of chemistry, Hahnemann Medical College; died, November 12, from cerebral hemorrhage, aged 48.

John F. Sanderford, Creedmore, N. C.; College of Physicians and Surgeons, Baltimore, 1890; member of the Medical Society of the State of North Carolina; died, November 12, in the Watt's Hospital, West Durham, from uremia, aged 57.

Jesse M. Spikes, Swarts, Ark.; University of Arkansas, Little Rock, 1911; member of the Arkansas Medical Society; died, November 13, from fracture of the skull, the result of an automobile accident near Pocahontas, Ark., aged 36.

Samuel M. Patton, Meadville, Pa.; Medical Department of Western Reserve University, Cleveland, 1882; served in the county commissioner's office for more than eighteen years; died, November 14, after a long illness, aged 63.

Sarah Isabel Shuey ⊕ Oakland, Calif.; University of California, San Francisco, 1878; practitioner in Oakland for forty-four years; died, November 22, from cerebral hemorrhage, in the Merritt Hospital, aged 70.

Wallace A. Ort, Springfield, Ohio; College of Physicians and Surgeons, Baltimore, 1901; member of the Ohio State Medical Association; died, November 24, from chronic nephritis and arteriosclerosis, aged 43.

Joshua U. Burnett, Sussex, N. B.; Jefferson Medical College, Philadelphia, 1862; was recently lost in the woods several days and found dead from exposure, near his fishing cottage, Chisholm Lake, aged 80.

George Oscar Marsh, Prescott, Ark.; Tulane University of Louisiana, New Orleans, 1895; member of the Oklahoma State Medical Association; died suddenly, November 16, from cerebral hemorrhage, aged 65.

Robert J. McArthur, South Sioux City, Neb.; Sioux City (Iowa) College of Medicine, 1901; was accidently shot through the head and killed while duck hunting, near Jackson, Neb., November 14, aged 45.

Walter Scott Vincent, Burlington, Vt.; University of Vermont, Burlington, 1861; practitioner for more than half a century; surgeon in the Civil War; also a druggist; died, November 10, aged 83.

Frank Harold Tyler ⊕ Kalamazoo, Mich.; University of Michigan, Homeopathic Medical School, Ann Arbor, 1880; died, October 19, from embolism, at the University Hospital, Ann Arbor, aged 66.

Harley H. Miller ⊕ Galveston, Ind.; Louisville Medical College, Louisville, Ky., 1897; was instantly killed, November 21, when the automobile in which he was driving was struck by a train, aged 50.

James Symington, New York City; College of Physicians and Surgeons (Columbia University), New York City, 1875; died, November 5, at a New York hospital, from lymphosarcoma, aged 67.

William F. Batman, Crawfordsville, Ind.; Jefferson Medical College, Philadelphia, 1880; member of the Indiana State Medical Association; died, October 23, from cerebral hemorrhage, aged 63.

John Martin Adams, Medina, Texas (years of practice); registered by Texas State Board of Medical Examiners, Act of 1907; died, November 21, at the Secor Sanatorium, Kerrville, aged 56.

David Collins Dinsmore, Kirksville, Iowa; Cleveland Medical College, Cleveland, 1861; practitioner for more than half a century; Civil War veteran; died, November 9, at Iowa City, aged 91.

⊕ Indicates "Fellow" of the American Medical Association.

Bernard Hove Harrison, Washington, D. C.; Howard University, School of Medicine, Washington, 1903; member of the Medical Society of the District of Columbia; died, October 18, aged 52.

William Sellers, Shreveport, La.; Tulane University of Louisiana, New Orleans, 1870; Confederate veteran; practitioner for more than half a century; died, November 25, aged 76.

Joel Davis Madden, Ossining, N. Y.; New York Homeopathic Medical College, New York City, 1876; former physician at Sing Sing Prison; died, November 18, aged 70.

Harry K. Weiler, Riverside, N. J.; Hahnemann Medical College and Hospital, Philadelphia, 1883; died, November 24, at Delanco, N. J., from cerebral hemorrhage, aged 65.

Arick Sutherland, Brodhead, Wis.; Milwaukee Medical College, Milwaukee, 1900; Civil War veteran; died suddenly in his chair, November 11, from heart disease, aged 75.

Harvey Louis Biggs, Olive Hill, Ky.; Kentucky University, Louisville, 1903; served as army surgeon during the World War; was shot and killed, November 21, aged 40.

Charles Wesley Gordon, Fort Wayne, Ind.; Medical College of Fort Wayne, 1877; Rush Medical College, Chicago, 1880; died, November 21, from arteriosclerosis, aged 69.

Henry Clarence Williams ✠ Boston; L.1880, M.1882, R.C.P., Edinburgh, Scotland; died, October 25, from uremia following operation for strangulated hernia, aged 66.

James K. P. Kessler, Cherryvale, Kan.; Cincinnati College of Medicine and Surgery, 1881; city physician of Cherryvale; died, November 18, from heart disease, aged 77.

Clarence P. Colburn, Richmond, Ind.; Miami Medical College, Cincinnati, 1883; died, November 17, at the Crane Sanatorium, from cerebral hemorrhage, aged 62.

L. D. J. Ensor, Cookeville, Tenn. (license, Tennessee, 1889); member of the Tennessee State Medical Association; was found dead in bed, November 18, aged 66.

Eddy Stearns Haswell ✠ Albany, N. Y.; Albany Medical College, 1909; specialist in internal medicine; died, November 19, at the Homeopathic Hospital, aged 35.

Charles Rosewater ✠ Omaha; University of Würzburg, Germany, 1920; member of the Omaha Pathological Association; died, November 23, aged 62.

Albert Daniel Yorke, Boston; University of Vermont, Burlington, 1891; also a pharmacist; died, November 22, at Jamaica Plain, Mass., aged 58.

Reuben C. Binns, Crawfordsville, Ala.; University of Georgia, Augusta, 1878; died, October 27, at the State Sanatorium for the Insane, aged 67.

Horace Augustus Yeomans, Belleville, Ontario, Canada; Victoria University, Toronto, 1889; for many years local health officer; died recently.

Samuel Echols Hale, New Orleans; University of Louisville, Ky., 1872; practitioner for nearly half a century; died, November 25, aged 71.

Thomas John Stafford ✠ Stockton, Ill.; Rush Medical College, Chicago, 1889; died, November 21, from peritonitis and gallstones, aged 61.

Banks I. Paul, Benford, Texas; Memphis Hospital Medical College, Memphis, Tenn., 1912; was shot and killed, October 31, aged 33.

Obe F. Watlington, Jackson, Tenn.; University of Louisville, Louisville, Ky., 1882; died suddenly, November 19, aged 60.

Robert W. Read, Murfreesboro, Tenn.; University of Tennessee, Memphis, 1883; died, recently, from pellagra, aged 69.

William Henry Bruns, St. Henry, Ohio; University of Cincinnati, 1915; died, November 22, from tuberculosis, aged 28.

S. L. Susong, Walland, Tenn. (license, Tennessee, 1889); died, November 11, at Maryville, from pneumonia, aged 70.

H. W. Nichols, Clarksdale, Miss.; Meharry Medical College, Nashville, Tenn., 1901; died, November 22.

Johnson C. Lindsay, Los Angeles; Miami Medical College, Cincinnati, 1872; died, November 23, aged 77.

James C. Palmer, Rogersville, Tenn. (license, Tennessee, 1889); died, October 25, aged 67.

James A. Smith, Brownsville, Ind. (license, Indiana, 1897); died, October 5, aged 83.

John O. Kent, Linesville, Pa. (license, Pennsylvania, 1881); died, November 14.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

"THE ALSAKER WAY"

During the past two or three years THE JOURNAL has received many inquiries regarding one R. L. Alsaker who issues a series of "Books That Teach The Alsaker Way to Health and Efficiency." Some of the more recent and typical inquiries follow. This from a physician in Pennsylvania who sent one of the Alsaker advertisements:

"Who is this 'M.D.'? His book 'Curing Diseases of Heart and Arteries' has driven a woman I know to be organically sound, into a state of serious, almost grave invalidism."

And a Nevada attorney:

"My wife has been reading 'Curing Diseases of Heart and Arteries' by Dr. R. L. Alsaker, published by Frank E. Morrison, N. Y. She is so impressed with this book that she is disposed to try to locate Dr. Alsaker and take treatment from him. She is troubled with a nervous affection of the heart. We would like to know something of Dr. Alsaker, and have been advised by Dr. ——— here to write you concerning him. We do not want to spend any money on him, unless he is really a first class specialist in heart diseases."

And this just received from a New York physician who sent with his letter one of Alsaker's advertisements on "High Blood Pressure—Hardened Arteries":

"The enclosed advertisement was taken from *Harper's Magazine*, I think for November. What can you tell me about this proposition? Will you kindly return the advertisement?"

Greatly reduced reproductions of part of some typical Alsaker advertising.

According to our records, Rasmus Larrsen Alsaker was born in 1883 in Norway; was graduated by Bennett Medical College, Chicago, in 1910; received licenses to practice in Illinois and Colorado in 1910 and in Missouri in 1915. After graduation he seems to have lived for two or three years in Denver, for a short time in Starbuck, Minn., and then to have moved to St. Louis, Mo., where he now is.

Alsaker's books are at present being advertised by Lowrey-Marden Corporation, 1133 Broadway, New York, although until comparatively recently, they were advertised from the same address under the name of Frank E. Morrison. Some years ago Alsaker advertised his books under his own name. In 1917, when Alsaker was 34 years of age and had been out of medical college barely 7 years, he was heralded in the advertisements as "an eminent authority" who had "put the net result of his many years of professional experience with sick people into his writings."

During the influenza epidemic public fear was capitalized in an attempt to sell the book: "The Alsaker Way to Prevent and Cure Influenza, Catarrh, Pneumonia, and Other Troubles of the Nose, Throat, Lungs, Etc." The public was reminded of the "terror that spread over this country during the 'Flu' epidemic when human lives—young and old—were being slaughtered in appalling numbers, and medical science was powerless to control it." The public was told, too, that "medical science predicts that this horrible destroyer of life is coming back again to work still more frightful havoc." All this leading up to this statement:

"There is a skilled physician in one of our largest cities who successfully treated hundreds of cases during the epidemic. All who followed this doctor's advice got well.

"In addition, he advised thousands of men and women in scores of other towns and cities of the country—HOW TO PROTECT THEMSELVES—and actually DEFY THE EPIDEMIC. (These facts can be verified by any genuinely interested inquirer.)

"This skilled physician—R. L. Alsaker, M.D.,—has put his expert knowledge at everybody's disposal in a printed form which explains in the simplest and plainest English all about the cause, the prevention and the CURE of Colds and Influenza, Pneumonia, Catarrh (all forms, chronic and acute) and all kinds of lung, chest, throat, nose, stomach and intestinal troubles which make ourselves and our loved ones easy victims of these dread diseases."

Alsaker's book "Curing Diseases of the Heart and Arteries" seems to be the one that is being pushed at present. The first part of this book contains certain elementary facts of physiology and hygiene, obvious to the point of banality, and such as could be found in the ordinary common-school textbooks on such subjects. The therapeutic phases of the subject are so treated that the average reader might well reach the conclusion that all other physicians, except Alsaker, are either fools or rogues, and that from Alsaker alone flows the only pure, unadulterated, 100 per cent. medical knowledge. For instance:

"I have seen many cases of heart disease where physicians had passed sentence of speedy death; but when these individuals ceased taking drugs and learned how to give themselves correct care they improved vastly and most of them were able to lead comfortable useful lives." (Page 14.)

"The fact that an individual has undergone much 'medical' treatment without benefit is no proof that a disease is incurable." (Page 16.)

"The ordinary treatment is a generous diet of liquid food, and various drugs are used to stimulate the heart. The most popular drug is digitalis. Rest in bed is prescribed. The rest is correct treatment, but the medicating and generous feeding are mistakes, as we shall see when we take up the treatment." (Page 39.)

"The usual treatment is liquid food, heart stimulants and rest in bed. The rest is the only correct part of the treatment." (Page 42.)

"In discussing the causation of heart troubles, other diseases have been given as causative factors. This is the usual medical way, but it is not correct. It is convenient." (Page 69.)

"To show what correct treatment will do, after medical treatment has failed, I shall tell you about a few cases taken from my own practice, . . ." (Page 73.)

The book details a number of "clinical cases" purporting to show the remarkable results produced by Alsaker where other physicians had failed. Where suggestions are made as to diet, the reader is referred to another one of Alsaker's books. Thus:

"It is very important to cook and dress the foods correctly. This subject would in itself require about 50 pages of space, so it can not be given in this volume. You will find it detailed in chapters 8, 9 and 10 of 'Eating for Health and Efficiency.'"

And this:

"All foods are to be simply cooked and dressed as directed in my book on 'Eating for Health and Efficiency.'"

More than thirty pages are given to the "treatment of heart disease." One would suppose that even the intelligent layman would realize that there is no justification for leading the public to believe that diseases of the heart and arteries can be self-diagnosed and self-treated. Alsaker's book on this subject may be counted on to have one very definite effect on the person who accepts its teaching. It may lead any patient, who because of an impaired circulatory system is under the care of a physician, to abandon such rational means as the physician might recommend and attempt self-treatment "The Alsaker Way."

Alsaker and others in similar business are exponents of the new near-quackery which is proving such a gold mine for those who practice it and for the magazines and newspapers which furnish the point of contact. The theories put forth by men of this type usually consist of 5 per cent. banalities of elementary science and 95 per cent. pseudo-scientific buncombe. The occasional rational—and obvious—thing that men of this type propound misleads intelligent people into accepting ridiculous and commercialized theories.

The Alsaker advertising is accepted by many magazines that will not open their pages to ordinary medical advertising.

Cure Versus Prophylaxis in Health Work.—We talk glibly of health protection, of health leagues, of health departments, and when you analyze their works, you find them engaged chiefly in the treatment or alleviation of the end results of disease.—H. Emerson, *Hosp. Soc. Service* **4**:272 (Nov.) 1921.

Correspondence

"GROUP PRACTICE; DIAGNOSTIC AND PAY CLINICS"

To the Editor:—Modern clinical medicine is an applied science and embraces such a vast field of knowledge that it is beyond the capacity of any individual to acquire the necessary learning, experience and skill to care efficiently for all patients. This fact has led to specialization and to the evolution of the internist, the surgeon and specialists in the narrower fields of medicine and surgery. A specialist may be eminently qualified in his own field of practice, but as a rule he is professionally incompetent outside it. Consequently, if the patient as a whole is to be examined and treated, it will take "nine tailors to make a man." This statement is not intended to indicate that specialization in the practice of medicine is wrong; but the number of specialists is greater than the need if one will honestly consider the welfare of the public. It is my opinion that a painstaking general practitioner is able to make a correct diagnosis in a large majority of all patients with the readily available small chemical and instrumental equipment and a thorough use of properly trained special senses.

Here lies the crux of the present situation. Today the public suffers because many general practitioners neglect to make the examination and record of the patient's condition, and in consequence the treatment and management given are slipshod, haphazard and often ineffectual. It is natural, therefore, that a substantial number of the public should turn for relief to the public pay or free clinic, or to a group of private practitioners, or place themselves in the hands of faddists and practitioners of the cults. In fact, one of the chief reasons for the growth of the cults is the failure of the general practitioner to give the best that is in him in service to his patients. Just why this is so, it is difficult to estimate. In part, it is due, I think, to the belief of many practitioners that modern medicine requires in all cases the application of all the refinements of laboratory and instrumental assistance in making a diagnosis; the fact is, these refinements in diagnosis are required in a small percentage of patients.

Pay clinics and group practice are the natural outgrowth of the conditions which I have briefly mentioned. These innovations in practice will probably continue; the public will demand them and will make use of them just so long as the needed relief is only partially given by the family physician. But the demand of the public for relief will not be afforded by the public pay clinic or by private group practice unless these organizations are conducted on fundamental principles and policies characterized by unselfish and sympathetic understanding of the needs of the public.

The welfare of the general public in the program of preventive medicine and in the treatment of disease and injury is fundamentally dependent on the preservation and the professional advancement of the general practitioner in the person of the family physician and the all important domiciliary visitation. Therefore, if the pay clinic and the groups of private practitioners are selfishly conducted for commercial purposes—in the interest of the individuals forming the staff or the group—the result will be harmful, yes disastrous, to the medical profession. This service to the public should include the general practitioner. If the staff of the clinic and the members of private group practitioners honestly do their whole duty to the public, the general practitioner may become the important factor in the whole program which his position as a family physician requires if the public is to receive due consideration and relief in the

operation of the pay clinic and group practice. The pay clinic and the private group must assume the responsibility for the improvement of the standard of medical practice in the community they serve. The clinic and the group may and should afford opportunity to the practitioners of the community for aid in making diagnoses in cases requiring special laboratory and roentgen-ray equipment as well as for graduate study and improvement in clinical work, if they desire it.

The question of fees in the pay clinic and in the private group is an important consideration, but is subsidiary to the fundamental principles and policies which must characterize the conduct of these organizations. There is a distinct need of facilities for diagnosis and treatment, including a qualified group of specialists for those patients who suffer from a small group of ailments. In the cities, public pay clinics will be of benefit to a class that is unable to pay the usual fees charged by private groups of specialists for this essentially expert service. But, as stated, the sick public that requires this expert service is relatively small. The larger group of patients requires only the services of a good, honest and resourceful practitioner who will give the best that is in him. If he does this, he will not lack for patients or for financial reward.

Finally, to judge from known conditions in Chicago, there is a lack of the old fashioned, resourceful family physician in the larger cities. Many private practitioners whose chief practice a few years ago consisted of domiciliary visitation now refuse to give this real obligation to the public and compel their patients who are too ill to visit the office, to go to the hospital. Whatever excuse may be given for this disregard for the comfort, welfare and financial condition of these patients, one is obliged to conclude that it is due really to selfishness and laziness in the desire to escape the hardships experienced by a real family practice; the best and most valuable service a physician may give.

FRANK BILLINGS, M.D., Chicago.

To the Editor:—The communications in THE JOURNAL (November 19 and 26) about the Cornell Pay Clinic illustrate the sort of disorder that is bound to arise at every fresh jolt in the journey of the medical profession from its old individualistic status to the new socialized status just appearing on the horizon.

Twenty years ago I presented at the Johns Hopkins Hospital in Baltimore the evidence that, in view of increasing public health activities, it was absolutely inevitable for the status of the general practitioner to be considerably modified. The change has been going on steadily before and since that time. But from time to time physicians wake up to its existence in New York, in Chicago, in Rochester, Minn., in Berkeley, Calif., or elsewhere and exclaim that it is an outrage, that the work of the general practitioner is being interfered with by hospital clinics, by college clinics for students, by public health clinics, by industrial clinics, by salaried physicians in factories, by public health nurses and by many other similar agencies—all of which is true.

There is no possible question that all these agencies and many more do interfere with the practice and prestige of the family physician. There is no question in my mind, also, that for an indefinite time to come, the public is going to want both the services of the private practitioner and also the services of the public health, hospital, college, factory and other clinics. Neither will be allowed to crush out the other. It is wholly a task of adjustment and readjustment over and over again.

The Cornell Pay Clinic and the similar pay clinic started some years ago at the Massachusetts General Hospital in Boston are needed to supply a group diagnosis (the only approximately correct diagnosis in difficult cases) for people of moderate means. These clinics can and do cooperate successfully with the general practitioners who send patients there. But the large number of persons who apply at such clinics stating that they have no family (or other) physician cannot be refused without injustice to the applicant and harm to the public health, and yet cannot be accepted without protest from the physicians. The same thing has been true for years in our "free" clinics, many of which now charge 50 cents a visit, with extra charge for roentgen-ray examinations, Wassermann tests, etc.

Patients want this service, and the public health is vastly the better for it. But it certainly competes and always will compete with the practice of private physicians. It is impracticable to identify and to exclude from hospital clinics all the patients who might pay a small fee to a private physician, although he (without the aid of roentgen-ray and laboratory tests) cannot in many cases give such patients good service and is therefore passed by in favor of the hospital clinic by dozens of sufferers.

What is called "hospital abuse" is denounced about every five years in some of our great cities. But it goes right on and increases steadily because the public wants it. In most places and for most of the time, private practitioners adjust themselves to this competition as they do to the competition of many other public health agencies. But now and then (as on Nov. 19, 1921) a journal publishes the old indignant protest and the old question is reopened.

The public wants *both* the private practitioner and his competitors, the public clinics in colleges, factories, schools, hospitals, juvenile courts, and group clinics like the Mayos. Neither can kill the other. They must adjust themselves in New York as they have elsewhere.

RICHARD C. CABOT, M.D., Boston.

"THE PIRQUET SYSTEM OF NUTRITION AND ITS APPLICABILITY TO AMERICAN CONDITIONS"

To the Editor:—I should like to point out that the adverse critics are missing the major idea of the Pirquet system. That system is essentially one of feeding children—not one of academic discussion of methods of estimation of the nutritional states. Even stripped of both its "pelidisi" and its "nem" features, it would still be a feeding system. The Wood tables are admittedly defective; so also may be the Pirquet scale. A faultless method is still held in the future. But at present the conclusions arrived at by the use of each method indicate the same thing, viz.: that many American children are undernourished. A consideration of the methods of arriving at that conclusion is interesting, but at the present stage it is not vital.

The American Relief Administration has shown that, aside from the removal of physical defects, the well-balanced, supplemental, warm, noonday meal is the solution of the question. Besides this observation, all else at present is of minor consequence. Mr. Hoover's organization also demonstrated that a workable machine—a system, if you please—can be developed that will administer food cheaply and efficiently on a large scale. That is the outstanding lesson to us.

I should like to point out, further, that in America no such machinery is in operation, although it stands in readiness in the form of our schools; that we would have to modify any scheme to fit various circumstances. For example, in this country all children, regardless of their nutritional state, should be offered a midday meal—for a consideration. This feature varies considerably from that of the American Relief Administration.

The necessity of the well-balanced, supplemental meal, rather than the makeshift milk and sandwich feedings now coming into use, and the method by which this meal could be supplied, are the things that I attempted to make plain in my paper.

W. E. CARTER, M.D., San Francisco.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

INTRAVENOUS SPECIALTIES

To the Editor:—There is a salesman here in Salt Lake City making extravagant claims about the medicines advertised in the enclosed pamphlet. Would you kindly advise me as to your opinion of it?

W. C. SCHULTE, M.D., Salt Lake City.

To the Editor:—I am interested in knowing the attitude of the Council on Pharmacy and Chemistry regarding the products of the Intravenous Products Company of America, 121 Madison Avenue, New York City. If the Council has already reported, please refer me to the appropriate number of THE JOURNAL. If it has not, please give me any information available.

H. B. GESSNER, M.D., New Orleans.

ANSWER.—The Intravenous Products Company of America has not requested the Council on Pharmacy and Chemistry to examine any of its intravenous specialties, nor have they been discussed in THE JOURNAL or examined in the American Medical Association Chemical Laboratory. The firm's list of specialties bears a striking resemblance to those of other "intravenous specialty" firms. Endoarsan, like Venarsen of the Intravenous Products Company of Denver, is stated to contain a cacodylate (dimethylarsenate) along with mercury and iodid. Venarsen was reported on unfavorably by the Council (THE JOURNAL, May 22, 1915, p. 1780), the inferior efficacy of sodium cacodylate was discussed (THE JOURNAL, March 25, 1916, p. 978) and the worthlessness of sodium cacodylate as a spirocheticide confirmed by H. N. Cole (THE JOURNAL, Dec. 30, 1916, p. 2012), William G. Ward (THE JOURNAL, Feb. 3, 1917, p. 390), and R. L. Sutton (THE JOURNAL, Feb. 17, 1917, p. 566). Endosal, like Venosal of the Intravenous Products Company of Denver, is stated to contain salicylate and a colchicum preparation (the latter is also stated to contain iodids). Venosal was found unacceptable for New and Nonofficial Remedies by the Council on Pharmacy and Chemistry. Like other "intravenous" firms, this company advertises the intravenous administration of drugs such as sodium iodid and hexamethylenamin. The objections to and the dangers of indiscriminate administration of drugs intravenously was recently emphasized in a report of the Council on Pharmacy and Chemistry "Some of Loeser's Intravenous Solutions" (THE JOURNAL, April 16, 1921, p. 1120).

REDUCTION OF PHAGOCYTOSIS BY HEXAMETHYLENAMIN

To the Editor:—Would the intravenous injection of from 20 to 50 grains of hexamethylenamin in solution have a tendency to destroy antibodies, injure white or red blood cells or otherwise lower vital resistance?

GEORGE S. GREENE, M.D., Gary, Ind.

ANSWER.—In the body, hexamethylenamin is converted into formaldehyd. Hektoen and Ruediger (Studies in Phagocytosis, *Journal of Infectious Diseases* **2**:128, 1905) found that solution of formaldehyd in dilutions of about 1:5,000 greatly reduced phagocytosis in vitro by the leukocytes in defibrinated blood. This effect was apparently due to the action of the formaldehyd on the opsonin in the serum.

"AUTOMOBILE ANTIFREEZING MIXTURES"

To the Editor:—Referring to your discussion in THE JOURNAL of November 26, page 1756, I have used straight kerosene for several years with perfect results. It is simple and inexpensive.

JAMES HUNTER, JR., M.D., Westville, N. J.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Mongtomery, Jan. 10. Chairman, Dr. Samuel W. Welch, Montgomery.

ARIZONA: Phoenix, Jan. 3-4. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

DELAWARE: Wilmington, Dec. 13. Sec., Reg. Bd., Dr. P. S. Downs, Dover; Sec., Homeo. Bd., Dr. H. W. Howell, 824 Washington St., Wilmington.

DISTRICT OF COLUMBIA: Washington, Jan. 10. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.

HAWAII: Honolulu, Jan. 9. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.

INDIANA: Indianapolis, Jan. 10. Sec., Dr. Wm. T. Gott, Crawfordsville.

MARYLAND: Baltimore, Dec. 13. Sec., Dr. J. McP. Scott, 141 W. Washington St., Hagerstown.

MINNESOTA: Minneapolis, Jan. 3-5. Sec., Dr. Thomas S. McDavitt, 539 Lowry Bldg., St. Paul.

NEW MEXICO: Santa Fe, Jan. 9-10. Sec., Dr. R. E. McBride, Las Cruces.

NEW YORK: Albany, Buffalo, Syracuse and New York City, Jan. 23-26. Asst., Professional Examinations, Mr. Herbert J. Hamilton, State Education Bldg., Albany.

NORTH DAKOTA: Grand Forks, Jan. 3. Sec., G. M. Williamson, 860 Belmont Ave., Grand Forks.

OKLAHOMA: Oklahoma City, Jan. 10-11. Sec., Dr. J. M. Byrum, Shawnee.

OREGON: Portland, Jan. 3. Sec., Dr. U. C. Coe, Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia, Jan. 3-9. Sec., Mr. Thomas E. Finnegan, State Capitol, Harrisburg.

PORTO RICO: San Juan, Jan. 3. Sec., Dr. M. Quevedo Baez, Box 804, San Juan.

RHODE ISLAND: Providence, Jan. 5-6. Sec., Dr. Byron U. Richards, State House, Providence.

SOUTH DAKOTA: Pierre, Jan. 17. Director, Dr. H. R. Kenaston, Bonsteel.

UTAH: Salt Lake City, Jan. 3. Director, Mr. J. T. Hammond, Capitol Bldg., Salt Lake City.

VIRGINIA: Richmond, Dec. 13-16. Sec., Dr. J. W. Preston, McBain Bldg., Roanoke.

WASHINGTON: Olympia, Jan. 10. Director, Mr. Fred J. Dibble, Olympia.

WEST VIRGINIA: Charleston, Jan. 10. Sec., Dr. W. T. Henshaw, Charleston.

WISCONSIN: Madison, Jan. 10-12. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

Massachusetts July Examination

Dr. Walter P. Bowers, secretary, Massachusetts Board of Registration in Medicine, reports the oral, written and practical examination held at Boston, July 12-14, 1921. The examination covered 13 subjects and included 130 questions. An average of 75 per cent. was required to pass. Of the 162 candidates who took the physicians' and surgeons' examination, 135, including 8 osteopaths, passed and 27, including 7 osteopaths, failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
College of Medical Evangelists	(1916)	79.8
College of Physicians and Surgeons, Los Angeles	(1921)	75
Georgetown University	(1918)	76.7
Emory University	(1920)	78.6
Baltimore Medical College	(1902)	75
Johns Hopkins University	(1919)	83
University of Maryland	(1919) 77.5, (1921)	75.5
Boston University	(1921) 75.5, 77.6, 78.6, 79, 79.4, 79.4,	81, 82
College of Phys. and Surgs, Boston	(1920) 76.8, (1921)	77.3
Harvard University	(1920) 81.5, 81.6, (1921) 79.6, 79.8, 80, 80.2, 80.3, 80.4, 80.4, 80.5, 80.8, 81, 81.5, 81.6, 81.7, 82, 82, 82.4, 82.5, 82.7, 83, 83, 83, 83.2, 83.2, 83.4, 85	77.5,
Middlesex College of Medicine and Surgery	(1920) 75.5, 76.5, 76.7, (1921) 76.1, 76.2, 76.7, 78, 79.2, 79.5, 85.7	75,
Tufts College Medical School	(1920) 76.4, 85.8, (1921) 75, 75, 75.1, 75.7, 76, 76.1, 76.4, 76.5, 76.7, 76.7, 77, 77, 77.2, 77.4, 77.4, 77.5, 77.6, 77.8, 77.8, 78, 78, 78.2, 78.3, 78.4, 78.6, 78.6, 78.7, 78.8, 78.9, 79.1, 79.2, 79.5, 79.6, 79.8, 79.8, 79.8, 79.8, 80, 80, 80.6, 80.7, 80.7, 80.9, 81, 81, 81.2, 81.5, 81.5, 81.7, 81.9, 82.5, 82.8, 83, 83	75,
Detroit College of Medicine and Surgery	(1913) 75.1, (1921)	85
Kansas City University of Physicians and Surgeons	(1921)	78
Bellevue Hospital Medical College	(1873)	75
Columbia University	(1920) 78.2, 82, (1921)	80.9
Long Island College Hospital	(1921)	81.5
Jefferson Medical College	(1921)	81
University of Pennsylvania	(1913)	90.4
University of Vermont	(1921)	78.2
Queens University	(1904)	75
University of Naples	(1919)*	75
Osteopaths	75, 75, 75.2, 75.8, 77.5, 78.1, 79.7,	81.6
FAILED		
College of Physicians and Surgeons, Los Angeles	(1920)	63.4
Kentucky School of Medicine	(1906)	66.1

College of Physicians and Surgeons, Boston.....(1918) 66.7, (1920) 60.8, (1921) 68
Middlesex College of Medicine and Surgery.....(1918) 59.8, (1920) 72.2, (1921) 68.3, 70, 70.5, 71.7, 72.7, 73.2
Tufts College Medical School.....(1898) 62.8, (1921) 71.7, 72.5, 73.2
Laval University .....(1920) 69.4
University of St. Vladimira.....(1904)* 70.9
University of Constantinople.....(1915)* 40.8
Osteopaths.....65.1, 67.7, 68.1, 71.3, 73.2, 73.4, 73.5
* Graduation not verified.

Social and Industrial Medicine

HOUSE DEBATE ON THE SHEPPARD-TOWNER BILL

The discussion in the House of Representatives on the Sheppard-Towner bill, which appears in the *Congressional Record* for November 18 and 19, is illuminating. In opening the discussion, Mr. Winslow of Massachusetts, chairman of the House Committee on Interstate and Foreign Commerce, stated that the committee had held long hearings and had given careful consideration to the subject:

"The members of the committee know, and probably most of the members of the House who have been here know, and all the country ought to know that this has been an extremely annoying, perplexing and discouraging subject. . . . Those who were the active proponents of it had an idea in their minds but had given mighty little thought to the method by which that idea could be put into execution. The log-rolling, which had been greater than in all of the log-rivers of the country in the spring season, was directed toward the passage of a maternity bill whether or no."

This is simply a polite and parliamentary way of saying that the various women's organizations had fixed their minds on securing the passage of something which could be called a maternity bill, with little idea of what it was to do or how its purposes were to be accomplished, and that they had organized for this purpose one of the strongest lobbies that has ever been seen in Washington. Mr. Winslow stated that there were two general propositions in the bill: First, whether it was advisable for the federal government to continue to contribute to the states in order that the states may carry out work within their own limits. The second question was whether the situation regarding maternal and infant welfare is so pressing and imperative as to warrant legislation. Mr. Winslow said that the bill as originally drafted and as passed by the Senate made it possible "for the Children's Bureau to dominate absolutely the methods to be pursued by the state." The plan proposed in the original bill Mr. Winslow characterizes as "as pretty a little bunch of concentrated departmental authority as was ever brought before the House. . . . The original bill was in such form that it was possible for the Children's Bureau and the chief of the Children's Bureau, without the control of any one, to tell every state in this nation how it had to carry on its health department, as affecting maternity and infancy."

Dr. John J. Kindred of New York led the opposition to the measure. He stated that the organized medical profession of the country was solidly against the measure and through no selfish reason whatever; that there is no disquieting death rate at the present time; that the statistics presented in support of the bill were unreliable and that the various states can more effectively carry out measures for maternal and child welfare than "the mongrel measure pending before us." As evidence of the last statement, he described the maternal and child welfare work now being carried on by the various state health departments.

Mr. Hawes of Missouri presented a lengthy statement regarding the history of the measure. He stated that the Sheppard-Towner bill had been changed eighty-eight times, that whole sections had been rewritten, sections had been stricken out, and new sections had been added. Discussing the means used in securing the passage of the measure he said:

"Laws by propaganda are becoming a dangerous menace. Congress desires information above all things. It particularly requests specialized information. Whether this information comes through the mail or is delivered personally, it is welcomed by the conscientious representatives. But there is another form of so-called information that is not information at all. A small group of citizens conceive an idea. They finance that idea and employ attractive men and women to travel from state to state and city to city promoting this idea. Hurriedly, without investigation and in nine cases out of ten without ever hearing the proposed bill read, with no comprehensive understanding of the enactment, acting merely on the delightful tale related by the propagandist, a resolution is passed, the endorsement is given, a local committee is appointed, and then the attractive gentleman or lady proceeds to the city of Washington. At the proper time the pounding process begins. Resolutions, telegrams and letters pour in upon the congressman, warp his own intellectual judgment, distort his personal view, and curtail his capacity by pounding and pushing him into a position which does not agree with his own intellectual conviction. . . . In many cases, this artificially organized propaganda distorts the public mind and beguiles to its support intelligent men and women who, upon explanation, become ashamed of their support or opposition to a measure. This has notably happened in this bill. People have supported it because it had the word 'mother' and the word 'child' connected with it. They have not considered cost. They have not considered national control of a state function. They have not considered state control of sacred and intimate things of life. They have not considered the possibilities of an opening, by way of precedent, for the promulgation of theories and doctrines totally antagonistic to the American idea of the rights of the home, the privacy of the individual, and the fundamental fact that motherhood is the fruition of love and not of science."

Mr. Greene of Vermont presented a strong argument against the bill and, in closing, said that he did not believe that "the women of the little state of Vermont were ready to admit that the social order had so far broken down that they must cry out to Washington for help in the care and safeguarding of maternity and infancy in the homes where for nearly two centuries the flower of American manhood and womanhood has been bred and reared."

Mr. Hill of Maryland stated that the members of Congress had been told that if they voted against this measure every woman in their district would be against them. He presented a letter from Dr. John Howland, chief pediatrician of Johns Hopkins Hospital, in which Dr. Howland stated that he was opposed to the bill because he did not believe that any such emergency existed as was claimed or that there is any basis for the statement that the United States stands seventeenth in the maternal death rate; that he did not believe that the way to improve health conditions in states is by federal control, that he believed that public health work depends primarily on local conditions, that if the federal government is to undertake maternal and infant welfare work, it should be under the United States Public Health Service, and that he was opposed to the federal aid plan as an unsound financial policy.

Miss Alice Robertson of Oklahoma, the only woman member of the House, spoke strongly against the measure, and in closing said: "Mr. Chairman, I think this is a harmful bill and I stand here and tell you so, and if I am digging my own political grave in doing so, let me say that it will be a mighty comfortable grave."

Speaking in favor of the bill, Mr. Barkley of Kentucky made a lengthy argument in favor of its constitutionality. He resented the insinuation that the members of the House were influenced by a women's lobby. He repeated the arguments made in the Senate in favor of the measure, that more than 300,000 children die in this country every year under 1 year of age, that Congress appropriated money without hesitation for the welfare of animals, and that there was no reason why it should not make an appropriation for the welfare of mothers and children. He said there was a decided difference of opinion in the committee as to whether the proposed bill should be administered by the Public Health Service or by the Children's Bureau, and that the committee felt that the Children's Bureau was better equipped for this purpose than any other branch of the federal government. He was in favor of this arrangement because one of the objections made against the bill was that it would establish a system of government medicine. The Public Health Service

is primarily a medical organization, while the Children's Bureau is not. "In that way" he said, "we met the objections. It was, however, feared that the government wanted to recognize and establish a particular school of medicine in the United States and send its doctors around to attend patients. There never was any ground for that fear, but some people seemed obsessed with it." Mr. Barkley quoted from the campaign speech of President Harding and from the Democratic platform endorsing health measures.

Mr. Cooper of Ohio said that the bill does this and nothing more than this: It provides that the federal government may stimulate, encourage and aid the several states of the Union in promoting the welfare and hygiene of maternity and infancy, if the several states themselves desire to do so. He repeated the arguments of the advocates of the bill, that 23,000 mothers died in childbirth in this country every year, that 250,000 infants died under 1 year of age, that most of these deaths were preventable, and that it is safer to be a mother in seventeen foreign countries than it is in the United States.

Mr. Graham of Illinois made a lengthy speech in favor of the bill, reviewing its history and summarizing the arguments in favor of it. As evidence of the attitude of the medical profession, he read the following resolution adopted by the American Medical Association at its Boston session: "Resolved, by the House of Delegates of the American Medical Association that it approves and endorses all proper activities and policies of the state and federal governments directed to the prevention of disease and the preservation of the public health."

Strangely enough, to those who know the history of this resolution and the discussion which took place at Boston, this expression of opinion on the part of the House of Delegates was regarded by the members of Congress as an endorsement of the Sheppard-Towner bill, and its reading was greeted with applause.

Mr. London of New York, one of the Socialist members of the House, made a strong speech in favor of the measure. He said that the progress of civilization is due to the raising of the general level of education, and that to the extent that fundamental and elementary principles of medical science have become known to the masses, to that extent have we made real and genuine progress in promoting health. He said that there is a larger measure of intelligence among American women than among American men, since American women, not being absorbed in the business of money making, have more time and are more interested in profound social problems that are brought to their attention than the men are. It is the undeniable obligation of the state to equip every citizen with the knowledge of elementary facts of those sciences about which there can be no difference of opinion, and among these is elementary hygiene. All the bill proposes is to make an appropriation to encourage the states in organized child welfare work.

Mr. Mondell, republican floor leader, urged the passage of the bill in a short speech in which he held that it was quite as logical to appropriate money for the care of human beings as for the care of animals or crops; that he believed in keeping pledges, and that while he had not made any pledges in favor of the bill, he imagined that "there are many gentlemen here whose majority was at least increased by reason of the fact that if they did not, others did for them give approval to legislation along these lines." He quoted from the Republican and Democratic platforms and Mr. Harding's pre-election speeches, and said that "We on the Republican side would be derelict in our duty to our party's declaration and to the recommendation of the Chief Executive had we not presented this measure at this session of Congress. . . . I am confident that a number of votes were cast for our candidate with the understanding that the party [Republican] stood for legislation along these lines. Are we to keep the party pledge or are we to quibble over this measure on the ground that it is somewhat paternalistic. . . . In my opinion it is our duty to . . . give this measure our earnest support."

After two days' discussion, the House substitute was adopted by a vote of 279 to 39. The Senate concurred in the substitution of the House bill, and the measure went to the President for his signature.

Book Notices

MENTAL HOSPITAL MANUAL. By John MacArthur, M.R.C.S., L.R.C.P., Senior Assistant Medical Officer, London County Mental Hospital, Colonoy Hatch. Cloth. Price, $5.25. Pp. 215. New York: Oxford University Press, 1921.

The author of this little manual has given the essential points in the practical management of institutions for mental cases. Such a book was needed. The young medical man entering the service of a hospital for mental cases is confronted with a different situation from that to which he has been accustomed in a general hospital. There the patients are at liberty to come and go; the relation of the nursing staff to the patient is quite different, and the administration is complicated by many factors which do not obtain in a general hospital. The latter part of the book deals with the legal control of the insane, and is obviously based entirely on the English procedure. There the Lord Chancellor has charge of all patients who have or have had property. The necessary rules and procedure under the English system are set forth. In this country a similar book could not be devised, as the laws and regulations vary in different states. The first part of the book, dealing with the care and management of the insane, is applicable everywhere. It includes chapters on the organization of a mental hospital. A too brief chapter on the duties of the assistant medical officer is supplemented by an excellent statement of the treatment of the insane. It deals with such subjects as hydrotherapy, seclusion, mechanical restraint and forced feeding. The discussion of hypnotics is perhaps the least satisfactory. The danger from the prolonged use of bromids is emphasized, but comparatively little is said as to their uselessness except when they are combined with other remedies, and then so far as the treatment of simple states of excitement is concerned they would better be omitted. The preference expressed for paraldehyd over chloral hydrate on account of the supposed dangers of the latter seems rather far fetched. The author has wisely refrained from attempting to make the manual in any sense a substitute for a treatise on mental disease. His only classification is based on that customary in the average mental hospital. He goes into only such questions as are likely to arise in the practical work of the medical officer, especial emphasis being placed on the training of the attendants and nurses to the end that they may be fully instructed in their duties. He recognizes that the efficiency of the nursing staff depends in large measure on the industry and watchfulness of the assistant medical officer.

LEHRBUCH DER SÄUGLINGSKRANKHEITEN. Von Professor Dr. H. Finkelstein. Second edition. Paper. Price, 140 marks. Pp. 864, with 174 illustrations. Berlin: Julius Springer, 1921.

In the ten years which have passed since the last edition of this book, pediatrics has developed in many directions. The developments are reflected in the new edition. Some sections, such as those on the nutrition of healthy infants, spasmophilia, eczema, and the classification and pathogenesis of nutritional disturbances, are practically new, while others, as those on tuberculosis, congenital syphilis and hemorrhagic pachymeningitis, have undergone considerable expansion. A few well chosen pictures have been added. The curves, which are numerous and extremely valuable, are almost entirely new. The book is primarily for the clinician, so that pathologic anatomy, physiology and bacteriology are presented only in sufficient detail to make the clinical picture clear. In considering the etiology of spasmophilia, the author discusses disturbances of nutrition, the question of a spasmogenic substance in cow's milk, and hereditary constitution, but thinks that several of the apparent causes act through variations in the alkali and water content of the body. In the treatment, he emphasizes the "salt free" diet when breast milk is not available. Cod liver oil and phosphorus are regarded as having a specific influence in all forms of spasmophilia. Congenital syphilis is treated by intravenous injections of neo-arsphenamin, alternating with calomel in oil intramuscularly and later with mercury rubs. Albumin milk, though introduced for fermentative diarrheas, has come to be

used for other gastro-intestinal disturbances. Eczema, which the author distinguishes from the exudative diathesis, is considered to have a varying etiology. In some children it is due to defects of nutrition; in others, it is due to a "hydrolabile" constitution, and is then best treated by a "salt free" diet. In still other cases, the external application of soothing preparations is of primary importance. The value of alkalis, especially potassium citrate, in pyelitis, as used by English and American physicians, he thinks is due largely to the amount of water given with the alkali. He prefers phenyl salicylate and secondarily hexamethylenamin, but admits that the clinical improvement depends largely on the amount of fluid which the patient can be made to take. He thinks that the potassium citrate is responsible for fever, thin stools, loss of weight, restlessness and fatigue, and therefore suggests combining tepid baths and suitable packs with the alkali treatment. The book is an excellent general textbook of pediatrics, and is worth translating into English to make it more easily available.

JACK O'HEALTH AND PEG O'JOY. A Fairy-Tale. By Beatrice Slayton Herben, M.D. With jingles by schoolchildren of Public School No. 15 of New York City. Illustrated by Frederick Richardson. Cloth. Price, 60 cents, net. Pp. 39, with 12 illustrations. New York: Charles Scribner's Sons, 1921.

This is a health book for children written mostly by children! The pupils of Public School 15 of New York City wrote a number of jingles parodying the rhymes of Mother Goose and teaching health lessons. These verses Dr. Herben has strung together into the daily life story of a boy and a girl. The story is full of fairies who sing the jingles. Children like it. The illustrations of Frederick Richardson are in the most accepted style of fairy tale illustration—attractive little figures and not the grotesques of Rackham or of some of the modern German illustrators. At only one point does the story go beyond the bounds of what a child's fairy book requires. There is, in its sixth chapter, a strenuous effort to say something about tuberculosis. To the average child this will mean nothing. The book is attractively printed and will make a most suitable gift.

THE PRINCIPLES OF THERAPEUTICS. By Oliver T. Osborne, M.A., M.D., Professor of Therapeutics, Department of Medicine, Yale University. Cloth. Price, $7 net. Pp. 881. Philadelphia: W. B. Saunders Company, 1921.

The least exact of the medical sciences is unquestionably therapeutics. No branch of medicine has suffered more from *a priori* reasoning, from uncontrolled observation, and from tradition than has this department. It is therefore refreshing to find a textbook which seeks rationality. Professor Osborne, for several years a member of the Council on Pharmacy and Chemistry and a voluminous writer on therapeutic subjects, has committed to one volume a store of therapeutic facts and observations. His first section, devoted to prescription writing, is replete with sound aphorisms and practical data useful to the medical student. The second part gives his own selection of useful drugs, following closely, with a few exceptions, the list prepared by the committee of the Council. His table of synonyms, however, is subject to criticism, since proprietary names are not distinguished from nonproprietary and preferred names are not indicated in any manner. He has given consideration to classification, his list being a clinical one based on indications. He is rather inclined to find indications for the therapeutic use of alcohol, although his views tend to the substitution of equally satisfactory drugs which prove to have the same therapeutic effects. The section on drugs occupies half of the book. The author then takes up the endocrine glands and organotherapy. He endeavors to cling to rationality, but has been inclined to accept as facts much uncontrolled evidence, and to reason therapeutic possibilities from admitted physiology. One of the most valuable sections of his book is that dealing with such practical therapeutic measures as inhalation, douching, gargling and lavage. The section on vaccines and serums begins with a brief consideration of immunology. The brevity of this section reflects the present status of this form of therapy, which ten years ago might have taken the same amount of space devoted in the present issue to endocrinology. On the other hand, the author has not permitted the importance of physical therapy to escape him, and gives adequate consideration to this subject. The remainder of the book is devoted to chronic drug poisoning, industrial poisoning, treatment of simple skin diseases, advice to physicians and a complete code of medical ethics. On the whole, Dr. Osborne's book is to be commended for its simplicity of style and for his conscientious effort to follow rationality in therapeutics.

THE PRINCIPLES OF HYGIENE. A Practical Manual for Students, Physicians, and Health-Officers. By D. H. Bergey, A.M., M.D., Dr.P.H., Assistant Professor of Hygiene and Bacteriology, University of Pennsylvania. Seventh edition. Cloth. Price, $5.50 net. Pp. 556, with 63 illustrations. Philadelphia: W. B. Saunders Company, 1921.

This is the seventh edition of a book first published in 1901. It is to be regretted that a more complete revision has not been made in view of the great advances in hygiene during the last twenty years. Many of the tables are old—such as that of Atwater's giving the nutrients furnished for 25 cents. Such important public health problems of today as infant welfare and venereal disease are given scant consideration. Although some comparatively unimportant diseases, such as trench fever, are given a place in the chapter on "Vital Causes of Disease," tuberculosis is not mentioned. The sixty pages devoted to a verbatim copy of the quarantine laws of the United States might better have been used for a discussion of tuberculosis. The statement on page 21 that the infant mortality rate is "due, primarily, to the effects of faulty nutrition" is certainly not true at the present time. The explanation of the rôle of micro-organisms in water purification, as given on pages 125 and 126, is quite inadequate, and there is much disagreement with the author's statements on the alleged value of terminal disinfection. The author apparently accepts the Pfeiffer bacillus as the cause of influenza, and quotes with approval tables on the value of a "composite vaccine."

MUSKELARBEIT UND HERZTÄTIGKEIT. Von Professor Dr. A. Jaquet. Rektoratsprogramm der Universität Basal für das Jahr 1920. Paper. Pp. 119. Basel: Friedrich Reinhardt, Universitäts-Buchdruckerei, 1920.

The subject is treated under three general heads: muscular work and pulse frequency; muscular work and the circulation; influence of muscular work on the heart muscle. Under the first caption are discussed the acceleration of the heart beat with muscular work, the mechanism of such acceleration, and the relation to pulse frequency of breathing, temperature of the blood and the metabolic products of working muscle. Under the second head are considered the relation between the work of muscles and the heart, the blood pressure and the peripheral circulation. The last chapter is concerned with the enlargement of the heart associated with prolonged overwork of the body, and the acuter overstrain of the heart. It may be noted in passing that the author is one who believes that there is a recognizable cardiac enlargement due to long continued overexertion. He also believes in an acute enlargement of the heart from overstrain, citing as one proof his own personal experience, which is almost a duplicate of Sir Clifford Allbutt's described about fifty years ago. Jaquet, however, admits that a decrease in the size of the heart is often seen after severe exertion, as contended by Moritz and others. The brochure is a review in the shape of abstracts of the work of others, with but few observations and conclusions of the author. There are few or no references later than 1915. While English and American authorities, and a few French, are quoted quite freely, some of the creditable work of Americans of the last decade is not mentioned.

UROLOGISCHE OPERATIONSLEHRE. Herausgegeben von Prof. Dr. Voelcker, und Prof. Dr. Wossidlo. Zweite Abteilung bearbeitet von Privatdozent Dr. O. Kneise, Geh. Med.-Rat Prof. Dr. Hermann Kümmell, Dr. Oscar Orth, 1. Ass.Arzt der chirurgischen Universitätsklinik in Halle, Privatdozent Dr. R. Paschkis, Professor Dr. F. Voelcker, Direktor der chirurgischen Universitätsklinik in Halle, and Prof. Dr. O. Zuckerkandl. Paper. Price, 108 marks. Pp. 307-581, with 220 illustrations. Leipzig: Georg Thieme, 1921.

The second part of this brilliant book on operative urology is the work of such authors and authorities as Kümmel of Hamburg and the late Otto Zuckerkandl of Vienna. The surgical technic of operations on the bladder, kidneys and ureter as well as on the scrotum and its contents are lucidly described and beautifully illustrated.

Medicolegal

Refusal of Examination on Account of School

(State ex rel. Crites v. Clark et al. (Mo.), 230 S. W. R. 609)

The Supreme Court of Missouri, in affirming a judgment for the respondents, says that this was an action in mandamus to compel the state board of health to give to relator Crites an examination for a license to practice medicine and surgery in the state of Missouri. The refusal to give him an examination was predicated on the character of the medical school from which he was a graduate. The board contended that the school was not "a reputable medical college of four years' requirements," as provided and required by the board in its schedule of requirements of 1907, and as defined in the statute of that year. The burden of showing that his college was reputable was on the relator. This was made so by the terms of the statute. The state board of health could exercise its reasonable discretion in determining the character of the school. It must exercise reasonable discretion, and not an arbitrary discretion. The evidence showed that the board made several examinations, and from the facts seen reached the conclusion that the school was not so equipped with instruments, library, hospital connections, and other things which would place it within the category of a reputable medical college of four years' requirements, as provided by law. Considering all the evidence, the most that could be said on the question was that on the character of the school the evidence conflicted seriously. In such case the trial court could well say (as it did say, by its judgment) that there was no arbitrary action on the part of the state board of health in refusing to recognize the school as one designated in the statutes. A detail of this conflicting evidence would serve no good purpose. It sufficed to say that the facts shown did not show arbitrary action on the part of the respondents. The writ of mandamus, in cases like this, reaches arbitrary action only, and not reasonably founded discretion. It followed that the judgment of the court below should be affirmed. A motion for a rehearing was denied.

Unlicensed Practitioners to Be Prosecuted, Not Enjoined

(Dean v. State (Ga.), 106 S. E. R. 792)

The Supreme Court of Georgia says that, on the information of the commissioner of health of Colquitt County, the solicitor general of the southern circuit, in the name of the state, brought an equitable action in the superior court of that county against defendant Dean. The petition alleged that the defendant was a chiropractor; that he visited the homes of the people in the community and county for the purpose of treating diseases, and maintained an office and place of business in said county, where he treated diseases; that he lacked the necessary skill and training to combat the spread and growth of communicable diseases, and was maintaining a public nuisance in the practice of his profession, in that, without having obtained a license to practice medicine from the state board of medical examiners as required by statute, he engaged in the practice of his profession in said county. The petition generally charged the defendant with misdeeds and with malpractice, to the injury of his patients and to the injury of the good morals and health of the public at large. The prayer was that he be restrained and enjoined from treating any person or persons or prescribing or directing any method of treatment, or in any other manner violating the laws of the state regulating the practice of medicine. On the hearing for an interlocutory injunction, the chancellor passed an order enjoining the defendant, as prayed. The chancellor did not pass on any issue of fact raised by the pleadings. He based his order enjoining the defendant from practicing his profession as a chiropractor expressly on the ground that the act of the general assembly approved Aug. 18, 1913, and the several acts amendatory thereof, were valid statutes of the state and applicable to the defendant, and that the practice of his profession by the defendant without having complied with the provisions of the statutes constituted a violation of the criminal law of the state. But the unlawful practice of medicine in the state is simply declared to be a misdemeanor. Neither the act approved Aug. 18, 1913, nor any of the acts amendatory thereof, declares one who engages in the practice of medicine in the state without having first taken the prescribed examination and obtained a license from the state board of medical examiners to be a public or common nuisance. None of the medical acts of the state undertake to extend the jurisdiction of equity over nuisances or to enlarge the category of public nuisances. The question was, therefore, whether equity, at the instance of the state, will enjoin as a common nuisance one who is engaged in the practice of medicine who has not taken the prescribed examination and obtained a license from the state board of medical examiners authorizing him to engage in the practice of medicine in the state. The question may be stated as follows: Will equity, at the instance of the state, enjoin a person from practicing the profession of medicine simply because such person has failed to take the prescribed examination and to obtain a license from the state board of medical examiners authorizing him so to do, in violation of the penal laws of the state? To state the question is to answer it. A court of equity will not enjoin the commission of crime generally. That the act of which abatement by injunctive process is sought is made penal by statute neither gives nor ousts jurisdiction in chancery. Accordingly, injunction will not lie at the instance of the state to restrain one from engaging in treating persons merely because he is amenable to the criminal laws of the state, in that he has not taken the prescribed examination and obtained a license from the state board of medical examiners, required of practitioners of medicine. So the mere fact that the defendant in practicing his professional without a license might be guilty of a misdemeanor would not authorize a court of equity to enjoin him from practicing his profession. If the medical acts of the state are applicable to him, he is amenable to criminal prosecution.

Revocation of License for Conviction of Selling Morphin—"Moral Turpitude"

(White v. Andrew et al. (Colo.),197 Pac. R. 564)

The Supreme Court of Colorado, in affirming a judgment of the district court of Denver, which dismissed a writ of certiorari from that court to the defendants, constituting the state board of medical examiners, is brief in its statement. It says that the board revoked the license of the plaintiff on several charges, one of which was that he was convicted in the district court of the United States of a crime involving moral turpitude; that is, the sale of morphin for other than medicinal purposes to an habitual user thereof. The conviction of such an offense is one of the statutory grounds for revocation of a physician's license. It is proper for the court on certiorari to say whether the crime shown in the evidence involved moral turpitude. The supreme court thinks there can be no question that it did. No other abuse of discretion was suggested, so the board was not guilty of such abuse, and it had jurisdiction of the subject-matter and person. On certiorari the court could review the board's action only on a question of jurisdiction or great abuse of discretion. There was nothing, therefore, on which the district court could reverse or modify the board's action, and the judgment of dismissal was right. It was urged that moral turpitude is too indefinite a term, and that therefore the statute is void; but that expression has been used, in statutes, textbooks and opinions on the common law for too many years to leave any question on that subject.

Society Proceedings

COMING MEETINGS

American Association of Anatomists, New Haven, Conn., Dec. 28-30.
American Physiological Society, New Haven, Conn., Dec. 28-30.
Am. Soc. for Pharm. and Exper. Therap., New Haven, Conn., Dec. 28-30.
Porto Rico, Medical Association of, San Juan, Dec. 10-11.
Society of American Bacteriologists, Philadelphia, Dec. 27-29.
Southern Surgical Association, Pinehurst, N. C., Dec. 13-15.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

November, 1921, **162**, No. 5

Pathways of Infection in Nervous System. F. Kennedy.—p. 625.
*Effect of Treatment for Syphilis on Severe Anemias. H. O. Foucar and J. H. Stokes, Rochester, Minn.—p. 633.
*Leukemia in Children; Special Reference to Lesions in Nervous System. M. H. Bass, New York.—p. 647.
*Pericarditis: Incidence and Diagnosis. W. W. G. Maclachlan, Pittsburgh.—p. 654.
Balantidium Coli and Pernicious Anemia: Report of Four Cases. A. H. Logan, Rochester, Minn.—p. 668.
Meltzer-Lyon Method of Draining Biliary System. A. Bassler, W. H. Luckett and J. R. Lutz, New York.—p. 674.
Acute Pancreatic Necrosis. J. Douglas, New York.—p. 687.
Immune Bodies in Type I Lobar Pneumonia. E. Steinfield and H. J. Darmstadter, Philadelphia.—p. 696.
Chemistry of Body in Diseases of Skin. O. L. Levin and M. Kahn, New York.—p. 698.
*Acute Suppurative Appendicitis (Gangrene of Appendix) Experimentally Produced. R. J. Behan, Pittsburgh.—p. 705.
*Auscultatory Sign Observed in Acute Abdominal Diseases. P. W. Aschner, New York.—p. 712.
Lethargic Encephalitis in Its Relation to Poliomyelitis. M. Neustaedter, J. H. Larkin and F. J. Banzhaf, New York.—p. 715.
Meralgia Paresthetica (Roth's or Bernhardt's Disease): Report of Cases; Three Cases Occurring in Same Family. H. I. Goldstein, Philadelphia.—p. 720.
Chronic Tuberculosis of Kidney. E. Beer, New York.—p. 736.

Effect of Treatment for Syphilis.—Severe anemia either primary or secondary, associated with late or latent syphilis, is apparently rare. Only twenty-five cases were discovered by Foucar and Stokes in approximately 4,800 records. The effects of treatment for syphilis on these anemias is discussed. It appears that in syphilis with anemia mercury should be used with caution, especially if the picture suggests the primary type. Arsphenamin has been much more effective in secondary anemia than in primary anemia, but curiously disappointing in secondary anemia with associated manifestations of syphilis. Transfusion should be a preliminary to arsphenamin when the hemoglobin is below 20 per cent. Reactions to arsphenamin injections must be avoided since they may produce an alarming drop in hemoglobin. No satisfactory rule for determining which case would improve on treatment for syphilis and which case would not could be arrived at. In general, half the cases may be expected to improve. The degree of improvement is not necessarily proportional to the demonstrability of syphilis. Hemoglobin estimations alone are not sufficient to indicate the progress of the patient. Arsphenamin treatment is safe if carefully used in anemia and should be employed in patients with undoubted evidence of the disease, and, as a therapeutic test, when reasonable suspicion of its presence exists. Transfusion must remain in the ultimate resort in primary cases, and in those cases associated with syphilis in which arsphenamin has failed, even in the presence of syphilis, the best effect will be secured by both together.

Leukemia in Children.—Six cases of leukemia in children in which symptoms referable to the nervous system were prominent are reported by Bass. Four of these gave the picture to cerebral hemorrhage. Three were proved cases: one by postmortem examination, two by lumbar puncture. The fourth case neither came to necropsy nor had a puncture performed; from its clinical picture, however, cerebral hemorrhage could with probability be diagnosed. Bass describes a case of acute leukemia mistaken for cerebrospinal meningitis, the clinical findings of which pointed to a leukemic infiltration as the cause of the symptoms. A very similar case with necropsy is reported from the literature. A case with terminal cerebral symptoms in which areas of macroscopic leukemic infiltration were found at postmortem examination is also described.

Pericarditis.—Ten per cent. of the necropsies reported on by MacLachlan disclosed pericarditis; 5 per cent. were acute; 4 per cent. were chronic and 1 per cent. were tuberculous. The principal etiologic factor in the acute and chronic forms of pericarditis seems to be associated with acute rheumatic fever. Acute pericarditis was present in 7 per cent. of the acute lobar pneumonias. In fifty-four cases of death due to tuberculosis there was no evidence of tuberculous pericarditis.

Experimental Appendicitis.—From experiments on rabbits Behan noted that the only time acute inflammatory reactive changes in the appendix occurred was when the lumen of the appendix was entirely obstructed, with strangulation of the mucosa, submucosa and muscularis. Obstruction to the lumen alone apparently resulted only in a collection of fluid between the mucosa and the muscularis in the submucous space, so that a cyst of the appendix was formed. However, when the obstruction extended beyond the mucosa and included the submucosa and muscularis a very marked reactive inflammation resulted, and gangrene of the appendix with sepsis and death of the rabbit took place.

Auscultatory Sign in Acute Abdominal Diseases.—Believing that some information might be obtained by examining with the stethoscope, auscultation was applied by Aschner to the abdomen in acute cases, mostly cases of appendicitis. In some of the patients examined in this way it was found that the heart sounds and the inspiratory murmur were audible over three or four of the quadrants. The heart sounds were somewhat distant and resembled fetal heart sounds. The inspiratory murmur was audible at times with quiet respiration, at other times only when the patient was requested to breathe more deeply. When the abdomen was opened, the peritoneal cavity of patients presenting these auscultatory signs was found to contain free pus, seropurulent fluid or blood (as in a case of ruptured tubal pregnancy). Of twenty such cases the sign was positive in eighteen, doubtful in one, and negative in one. In eight cases the symptoms and usual physical examination did not suggest the presence of peritonitis. In two cases presenting the sign and not showing the expected peritonitis marked intestinal distention was present. In three other cases of distention without peritonitis the sign was not present. One case of intraperitoneal hemorrhage, a ruptured tubal pregnancy showed the sign.

American Journal of Syphilis, St. Louis

October, 1921, **5**, No. 4

Differential Diagnosis of Chancre and Carcinoma of Cervix. A. S. Warthin. Ann Arbor, Mich., and L. Noland, Birmingham, Ala.—p. 553.
Concerning Pre-Columbian Existence of Syphilis in Europe. D. W. Montgomery, San Francisco.—p. 563.
Thorough History an Important Factor in Syphilis. C. J. Broeman, Cincinnati.—p. 565.
Syphilis of Genital Organs of Male and Urinary Organs. V. L. Thompson, Hot Springs National Park, Ark.—p. 573.
Age of Recipient as Factor in Toxicity of Arsphenamin. G. B. Roth, Washington, D. C.—p. 588.
Syphilis in Third Generation. I. H. Tumpeer, Chicago.—p. 601.
Standarization of Wassermann Reaction. XXI. Study of Methods for Conducting Secondary Incubation and Time of Reading of complement Fixation Reactions in Syphilis. J. A. Kolmer, Philadelphia.—p. 614.
Id. XXII. Method for Preventing Influence of Natural Antisheep Hemolysin on Complement-Fixation Reactions After Secondary Incubation. J. A. Kolmer, Philadelphia.—p. 628.
Relation Between Syphilis and Diabetes Mellitus. J. Rosenbloom, Pittsburgh.—p. 634.
Epitrochlear Adenopathy in Syphilis. R. H. Rulison, New York.—p. 643.
Silver Arsphenamin. W. H. Guy and F. M. Jacob, Pittsburgh.—p. 670.
Public Health Activities in Venereal Disease Control. H. H. Hazen, Washington, D. C.—p. 674.
Dilute or Concentrated Solutions of Arsphenamin. D. W. Montgomery and G. D. Culver, San Francisco.—p. 677.

Archives of Dermatology and Syphilology, Chicago

November, 1921, **4**, No. 5

Poikiloderma Atrophicans Vasculare. J. E. Lane, New Haven, Conn.—p. 563.
*Clinical and Histologic Features of Certain Types of Cutaneous Tuberculosis. F. Wise and D. L. Satenstein, New York.—p. 586.
*Darier's Disease in Infant. J. A. Borghoff, St. Louis.—p. 609.
Refractometric Studies with Serums of Normal Rabbits Receiving Intravenous Injections of Arsphenamin and Neo-Arsphenamin. K. Tokudo. Philadelphia.—p. 616.
Experimental Work on Blood Nitrogen in Psoriasis. R. C. Jamieson, Detroit.—p. 622.

*Treatment of Psoriasis. R. L. Sutton, Kansas City, Mo.—p. 633.
Problem of Psoriasis. P. Kilroy, Springfield, Mass.—p. 636.
New Method of Roentgen-Ray Therapy in Psoriasis. O. H. Foerster and H. R. Foerster, Milwaukee.—p. 639.
Dermatologic Symptoms of Endocrine Dysfunction. P. E. Bechet, New York.—p. 660.
Roentgen-Ray Treatment of Acne Vulgaris. H. H. Hazen and F. J. Eichenlaub, Washington, D. C.—p. 671.
Infective Origin of Anogenital Pruritus. J. M. Winfield, Brooklyn.—p. 680.

Tuberculosis of Skin.—The clinical and histopathologic features of two different types of disseminated tuberculosis of the skin have been recapitulated by Wise and Satenstein, namely, lupus miliaris disseminatus faciei, and the papulonecrotic tuberculids.

Darier's Disease in Infant.—Darier's disease is generally understood to be a disease of early adult life, starting usually between the ages of 8 and 20 and extending on beyond middle age. Borghoff's patient was only 27 months old. The patient died about five months after being presented for treatment. The cause of the death could not be ascertained though the family attributes it directly to the disease of the skin. A necropsy was not obtainable.

Treatment of Psoriasis.—In the treatment of this condition Sutton places dependence on the injection of a foreign protein (in the form of an autogenous colon vaccine) and the liberal use of a chrysarobin ointment, much stronger than that commonly employed (20 per cent.). The ointment is applied to the patches twice daily by means of a stiff tooth brush. The patients are kept in bed, and as a rule wear a full length suit of union underwear all the time. The eyes are bandaged at night. The average period of confinement is seven days. Following this, any few remaining patches can be treated and kept covered (to prevent staining of the clothing), the vaccine is discontinued, and arsenic medication begun.

Archives of Internal Medicine, Chicago

Nov. 15, 1921, **28**, No. 5

*Clinical Studies of Respiration. VII. Effect of General Weakness and Fatigue on Vital Capacity of Lungs. F. W. Peabody and C. C. Sturgis, Boston.—p. 501.
Studies on Erythrocytes; Reticulum, Polychromatophilia and Mitochondria. J. A. Key, Boston.—p. 511.
*Uncinarial Nephritis. F. Rojas and J. T. Morengo, Guayaquil, Ecuador.—p. 550.
*Comparative Studies in Chemistry of Blood and Cerebrospinal Fluid. G. Egerer-Seham and C. E. Nixon, Minneapolis.—p. 561.
An Analysis of Ninety Cases of Functional Disease in Soldiers. J. M. Swan, Rochester, N. Y.—p. 586.
*Variation of the Phenolsulphonephthalein Excretion with Urine Volume in Chronic Interstitial Nephritis. R. R. Snowden, Pittsburgh.—p. 603.
Relation of Gastric Content to Secretory and Motor Functions of Stomach. H. Wheelon, St. Louis.—p. 613.
*Case of Alkaptonuria; Its Metabolism. R. B. Gibson and C. P. Howard, Iowa City.—p. 632.
*Influence of Inorganic Iron on Regeneration of Blood After Hemorrhagic Anemia. J. H. Musser, Philadelphia.—p. 638.
New Method of Interpretation of Renal Function Test Meal. H. Sharlit and W. G. Lyle, New York.—p. 650.
*Terminal Cardiac Arrhythmias. F. R. Dieuaide and E. C. Davidson, Baltimore.—p. 663.
Experimental Inquiry into the Cerebral and Neuromuscular Manifestations of Digitalis. D. I. Macht and W. Bloom, Baltimore.—p. 678.

Physical Weakness and Vital Capacity of Lungs.—The vital capacity of the lungs in patients with great physical weakness, but without disease of the heart or lungs, Peabody and Sturgis found to be not more than 26 per cent. below the normal standards. In heart disease, the vital capacity may be as much as 75 per cent. below the normal standards. Repeated tests of the vital capacity were made every fifteen seconds for ten minutes in patients with severe heart disease. The exertion involved was considerable, but no evidence of fatigue of the muscles of respiration was observed. The volume of the maximum expiration was as great at the end of the series of tests as at the beginning. These observations indicate that general muscular weakness and fatigue of the muscles of respiration are not important factors in causing the reduction of the vital capacity of the lungs in heart disease.

Uncinarial Nephritis.—In nine subjects studied by Rojas and Morengo hookworm infection caused nephritis with chlorid retention. The index of urea excretion was low in three cases. The return to normal took place as soon as anthelmintic therapy expelled the hookworm; although the red cell count was still low.

Chemistry of Cerebrospinal Fluid in Syphilis.—Seham and Nixon found that in the cerebrospinal fluid in syphilis no constant deviation from normal is encountered in sugar creatinin or urea content, in acid base equilibrium, in specific gravity, or in enzymatic activity.

Kidney Function in Chronic Interstitial Nephritis.—Snowden asserts that in cases of chronic interstitial nephritis, showing functional impairment as regards phenolsulphonephthalein, there is a retardation and prolongation of the excretion of the dye. This retardation is the earliest indication of functional disability. As impairment becomes more marked the retardation becomes more pronounced. In most cases of marked functional impairment, the excretion of the phenolsulphonephthalein varies more or less directly with the volume of urine, and in these cases the phenolsulphonephthalein output is materially increased when the flow of urine is stimulated and increased by the free administration of water.

Metabolism Study in Alkaptonuria.—In the case studied Gibson and Howard found a high ammonia nitrogen, low urea nitrogen, moderately high uric acid nitrogen figures, creatinuria, and high undetermined nitrogen. The sulphur excretion seems to have been essentially normal.

Value of Inorganic Iron in Hemorrhagic Anemia.—After hemorrhagic anemia in otherwise normal dogs, under standard conditions, dogs receiving iron in two of four experiments, regenerated blood more rapidly than their controls during the early stages; but both test and control dogs attained figures approximately normal in about the same time interval. In the other two studies, regeneration was more rapid and complete in the control dogs, particularly when the blood counts are analyzed in relation to the blood volume changes. Musser concludes, therefore, that the administration or inorganic iron cannot be said to produce any constant alteration in the course of an experimental hemorrhagic anemia.

Terminal Cardiac Arrhythmias.—Three cases are reported by Dieuaide and Davison because of the occurrence of interesting arrhythmias determined electrocardiographically shortly before and during the interval immediately preceding death. The general changes which occurred were a gradual slowing of the cardiac rate with coincident lengthening of the PR, QRS and QT intervals and diminution in the amplitude of the R and T waves; and loss of control of the rhythm by the normal pacemaker, apparently with the inception of auriculoventricular nodal rhythm. Further, as a result of the functioning of various abnormally irritable foci, the following arrhythmias were observed in addition to heart block and nodal rhythm: auricular and ventricular extrasystoles; ventricular tachycardia and auricular and ventricular extrasystoles; ventricular tachycardia and auricular and ventricular fibrillation. It is suggested that oxygen want and, perhaps, carbon dioxid accumulation, following cardiac failure, underlie these abnormalities in such cases as those presented.

Colorado Medicine, Denver

November, 1921, **18**, No. 11

Diverticulitis of Large Bowel. J. C. Masson, Rochester, Minn.—p. 235.
Present Knowledge Regarding Cause of Cancer. L. Freeman, Denver.—p. 238.
Chronic Nontuberculous Pulmonary Suppuration. L. W. Frank, Denver.—p. 240.

Iowa State Medical Society Journal, Des Moines

Nov. 15, 1921, **11**, No. 11

Organization or Association of Physicians as Against Individualism or Socialization. C. B. Taylor, Ottumwa.—p. 417.
Mental Deficiency Problem. C. R. Van Epps, Iowa City.—p. 421.
Special Field of Neurologic Surgery After Another Interval. H. Cushing, Boston.—p. 426.
Treatment of Chronic Arthritis with Special Reference to End Results. W. L. Bierring, Des Moines.—p. 430.
Pellagra. J. W. Myers, Sheldon.—p. 433.
Detachment of Adherent Placenta and Delivery in Abortion. C. E. Ruth, Des Moines.—p. 434.
Dietary Treatment of Nephritis. R. L. Fenlon.—p. 437.

Johns Hopkins Hospital Bulletin, Baltimore

November, 1921, **32**, No. 369

*Radiographic Evidence of Influence of Cod Liver Oil in Rickets. E. A. Park and J. Howland, Baltimore.—p. 341.
*Lipodystrophia Progressiva. Report of Case. H. L. Smith, Baltimore.—p. 344.
*Experimental Study of Phagocytosis in Relation to Terminal Infections. H. B. Cross, Baltimore.—p. 350.
Chemical Dynamics of Muscle. F. G. Hopkins, Baltimore.—p. 359.

Value of Cod Liver Oil in Rickets.—A study of fifty cases in which cod liver oil was administered with uniformly consistent results leads Park and Howland to say very definitely that cod liver oil brings about a change in the bones which, if the diet is not too faulty, amounts to complete cure. The change is not noticeable at once, but is readily demonstrable in almost all cases by the end of a month. In two or three months so much infiltration with salts has taken place that the extremities of the bones, except for deformities, are practically normal, and only differences in the finer architecture of the ends of the bones indicate the previous existence of a rachitic process. Park and Howard regard cod liver oil as a specific for rickets. They have not seen it fail in a single instance and have known it to cure the rickets even though the children were dying of some other disease.

Lipodystrophia Progressiva.—Smith's case is one of lipodystrophia progressiva associated with arteriosclerosis, chronic nephritis, hypertension and a moderate thyropathy as shown by the slight enlargement of the thyroid gland, the rather prominent eyes, the slight lid lag, the tremor, the slight nervousness, the increase in the pulse rate, the acroctanosis and the accelerated metabolic rate.

Phagocytosis in Terminal Infections.—No decrease in phagocytic activity against any bacteria not concerned in the primary infection has been demonstrated by Cross even in the late stages of fatal infection. This would suggest that terminal infections do not arise primarily as the result of a rupture in the phagocytic defense. A subnormal opsonic index for the specific infecting organism is not an invariable phenomenon in fatal infections. Death in fatal infections does not always occur at the period of lowest opsonic activity.

Journal of Infectious Diseases, Chicago

November, 1921, **29**, No. 5

*Relationship of Pneumococcus to Acute Infections of Upper Respiratory Tract in Man. Influenza Studies. VI. J. E. Gordon, Chicago.—p. 437.
*Gram-Negative Cocci in "Colds" and Influenza. Influenza Studies VII. J. E. Gordon, Chicago.—p. 462.
Chemotherapy of Experimental Typhoid Carrier Condition. T. D. Beckwith, San Francisco.—p. 495.
*Organisms of B. Lactimorbi Group Found in Throat Cultures and Simulating B. Diphtheriae. R. G. Perkins and D. S. Spreng, Cleveland.—p. 513.
*Rapid Method of Pneumococcus Typing. W. W. Oliver, New York.—p. 518.
*Occurrence of Hemolytic Streptococci in Normal Throat. D. J. Davis, Chicago.—p. 524.
Logarithmic Nature of Thermal Death Times Curves. W. D. Bigelow, Washington, D. C.—p. 528.
Bacteriology of Peridental Tissues Radiographically Suggesting Infection. C. C. Berwick, San Francisco.—p. 537.
Incidence of Tuberculosis in Various Organs of Pigeon. O. Riddle, Cold Spring Harbor, N. Y.—p. 544.
*Opsonic Reactivation of Antimeningococcus Serum. L. Hektoen and R. Tunnicliff, Chicago.—p. 553.
*Blanching of Skin by Serum Injection in Scarlet Fever. F. W. Mulsow, Chicago.—p. 557.

Relation of the Pneumococcus to "Colds."—Simple acute respiratory infections of varied clinical type, occurring in an urban population, and broadly classified as "common colds," and a recurrent epidemic of influenza were investigated by Gordon to determine, first, the frequency with which the pneumococcus could be demonstrated in cases of influenza and in waves of common colds, and then to compare the extent of its incidence in these conditions with its occurrence in the upper respiratory tract of normal persons. The average incidence of the pneumococcus in normal throats was about 21 per cent. Cases of common colds showed pneumococci more commonly, 35 per cent., and the same was true true of influenza, 38 per cent. Type incidence of pneumococci in normal persons and in persons with colds was characterized by the infrequent occurrence of the fixed types of pneumococci. Fixed types are somewhat more frequent in influenza than in other acute infections of the upper respiratory tract. No serologic relationship could, in general, be demonstrated between the pneumococci found in these infections. Types other than Type IV were observed. Type IV strains in this series show a division into eight different strains and three small groups. No common strain of pneumococcus was present in acute respiratory infections. A particular group of cases occurring in a localized epidemic showed a uniform occurrence of the pneumococcus in practically all of the cases studied, a Type IV pneumococcus. The strains were proved to be serologically identical. It seems certain, then, that although the general statement can be made that pneumococci are not found in the majority of colds, and that when they do occur they are rarely related to each other, nevertheless instances occur in which a single type of pneumococcus is involved in all cases of a given group. Comparative virulence tests showed that the pneumococci from colds and from influenza were more pathogenic than the strains from normal throats.

Gram-Negative Cocci in "Colds."—No essential difference was distinguished by Gordon between the incidence of the various groups of gram-negative cocci in common colds, and in a like series of normal persons. In epidemic influenza, the incidence was less than in normal persons. *M. catarrhalis*, the most common member of the group, is carried for long periods of time in the throats of many normal persons, constituting a permanent member of the normal throat flora. No distinguishable differences in virulence for mice and rabbits could be determined between strains of *M. catarrhalis* from normal sources and those from colds or influenza. These observations do not indicate that *M. catarrhalis* is generally concerned in the pathogenesis of common colds or influenza.

Throat Bacteria.—In normal and pathologic throats Perkins and Spreng assert organisms occur from time to time which under routine conditions so closely resemble *B. diphtheriae* as to cause possible confusion. These organisms may be readily differentiated, even under these conditions, by certain constant morphologic characteristics, and when isolated spores and motility are seen.

Rapid Typing of Pneumococci.—In 100 consecutive, unselected cases of pneumonia, in all but two instances, a typing of the pneumococcus has been effected by Oliver within from thirty to forty minutes by the rapid precipitin method, which was checked by the longer cultural or mouse method. The substitution of inulin for dextrose and the addition of Andrade indicator seems to possess certain advantages over the standard Avery cultural method.

Hemolytic Streptococci in Normal Throats.—Davis claims that cultures taken at short intervals sooner or later reveal the presence of hemolytic streptococci in the throats of practically all normal adult persons. The cocci as revealed by throat swabs are not numerous; far less than in the crypts of tonsils or adenoids.

Opsonic Reactivation of Antimeningococcus Serum.—The results reported by Hektoen and Tunnicliff are in complete harmony with earlier observations showing that opsonic serum, "normal as well as immune owe their full action to a thermostabile opsonic substance and a thermolabile complement-like body which greatly promotes the action of the first substance," and confirm the conclusion of Kolmer, Toyama and Matzunami that the opsonic power of antimeningococcus serum may be increased by fresh normal serum. These observations are not in accord with those of Evans. The authors conclude that evidently the method used by Evans is not suited to bring out the activating influence of normal serum on antimeningococcus serum. The view that there is a fundamental distinction between the "labile opsonins" of normal serum and the hypothetic tropins lacks the support necessary to justify its retention, and the use of the word tropin to designate a special opsonic substance, the existence of which has not been demonstrated, would better be dropped.

Skin Blanching by Injecting Scarlet Fever Serum.—It appears that the serum from those acutely ill with scarlet

fever rarely produces any blanching effect. The serum from normal persons or scarlet fever convalescents produced quite a definite blanching in approximately half of the cases studied by Mulsow; there was a faint suggestion of blanching in 12 per cent. and an entire absence of any blanching in the rest. In considering the practical applications of this test it must be recalled that when the rash is rather faint or fading, blanching cannot be observed. In general, if no blanching occurs when serum is injected into a patient in the acute stage of scarlet fever, the results would mean little, but should blanching occur it would appear that the injected serum is not from a scarlet fever patient in the acute stage of the disease. Although the blanching phenomenon is interesting from the scientific standpoint, Mulsow says it does not appear at present to be of signal value in the differential diagnosis of scarlet fever.

Journal of Orthopaedic Surgery, Boston

November, 1921, **3**, No. 11

Principles of Surgery of Peripheral Nerve Injuries of Warfare. Harry Platt, Manchester, England.—p. 569.
Primary Osteomyelitis of Patella. Case Report. E. B. Mumford, Indianapolis.—p. 583.
Coalitio Calcaneo-Navicularis. Slomann, Copenhagen.—p. 586.
*Bone Sarcoma, an Analysis of Cases Admitted to Massachusetts General and Collis P. Huntington Memorial Hospitals from January 1, 1911, to January 1, 1921. R. B. Greenough, C. C. Simmons, T. R. Harmer, Boston.

Bone Sarcoma.—One hundred and forty-eight cases of supposedly bone sarcoma reviewed by this committee for a ten-year period yielded for study: osteogenetic sarcoma, twenty-seven cases; benign giant cell tumor, twelve cases; angiosarcoma, one case; myeloma, three cases. The classification of Ewing has been adopted, and of the tumors of the osteogenic group three types are distinguished, of which, however, only two are available in this series: sclerosing type, one case; telangiectatic, no case; fibrocellular, twenty-six cases. The history of trauma shortly preceding symptoms is more often obtained in cases of osteogenic sarcoma than in other classes of malignant disease (ten out of twenty-seven cases). Osteogenic sarcomas are more common in young adults, but occur at all ages. They affect more often the epiphyseal ends of the long bones, especially femur and tibia, but are found occasionally in other situations. The chief symptoms are pain and tumor. Spontaneous fracture may occur but is unusual. Errors in diagnosis are common and result from confusion of bone sarcoma with other diseases. Of forty traced cases of osteogenic sarcoma, twenty-three patients had radical operative treatment, two had exploration only, and fifteen were not operated on. This gives an operability of 66 per cent. There was one operative death. There were three three-year cures, or 13 per cent., of radical operations. No material benefit was obtained by Coley serum in the four cases in which it was employed. Of twelve cases of benign giant cell sarcoma trauma appeared as a causative agent in only three cases. Of the twelve traced cases of benign giant cell sarcoma, two have to be discarded, as only six months have elapsed since operation. Of the remaining ten cases, three patients had amputation performed, two had resection, while the other five cases had only incomplete removal of the tumor by incision and curettage. Eight cases have passed the three year limit without evidence of recurrence.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

November, 1921, **18**, No. 4

*Determination of Coagulation Time of Blood in Animals. O. Inchley, Cambridge, Mass.—p. 237.
Influence of Electric Current on Absorption of Drugs. O. Inchley, Cambridge, Mass.—p. 241.
Influence of Colloids on Action of Noncolloidal Drugs. III. W. S. Van Leeuwen and A. Von Szent-Gyorgyi, Leiden, Holland.—p. 257.
Influence of Colloids on Action of Noncolloidal Drugs. IV. W. S. Van Leeuwen and A. Von Szent-Gyorgyi, Leiden, Holland.—p. 271.
Sensitiveness to Poisons in Avitaminous Animals. W. S. Van Leeuwen and F. Verzar, Leiden, Holland.—p. 293.
Physiologic Standardization of Extract of Bellandonna. W. S. Van Leeuwen and P. H. Maal, Leiden, Holland.—p. 313.

Determination of Coagulation Time of Blood.—The method adopted by Inchley is a modification of Buckmaster's and consists essentially in taking up a drop of blood in a fine wire loop and observing when, on slowly rotating the loop by hand, the blood no longer moves freely under gravity. It is convenient to note the time when the first sign of altered mobility appears, and also when complete fixation of the drop occurs. The mean of these is taken as the end of clotting time. The preparation is maintained at blood temperature in a small moist chamber.

Kansas Medical Society Journal, Topeka

November, 1921, **21**, No. 11

Pelvic Cellulitis. W. J. Eilerts, Eldorado.—p. 347.
Use of Pituitary Extract in Obstetrics. P. S. Mitchell, Iola.—p. 349.
Toxemia of Pregnancy. G. C. Mosher, Kansas City.—p. 353.
Law for the Doctor. L. Childs. Physician's Liability for Acts of His Partner.—p. 362.
Rupture of Aortic Aneurism with Adherent Pericarditis. H. R. Wahl.—p. 363.

Kentucky Medical Journal, Bowling Green

November, 1921, **19**, No. 11

Doctor of Tomorrow. P. D. Gillim, Owensboro.—p. 680.
Inflammatory Lesions of Nasal Accessory Sinuses. S. S. Watkins, Louisville.—p. 682.
Surgical Treatment of Certain Types of Dyspepsia. S. McGuire, Richmond, Va.—p. 727.
Some Phases of Pyloric Obstruction. J. Pritchett, Louisville.—p. 731.
Care and Feeding of Premature Infants. J. W. Bruce, Louisville.—p. 733.
Nocturnal Enuresis. G. Fulton, Louisville.—p. 736.
Cerebral Embolism; Case Report. F. G. Speidel, Louisville.—p. 738.
Basal Metabolism: Value in Diagnosis and Treatment. J. W. Moore, Louisville.—p. 740.
Extragenital Chancer; Case Reports. W. J. Young, Louisville.—p. 748.
Perforation of Uterus by Curet. L. W. Frank, Louisville.—p. 750.

Medical Record, New York

Nov. 19, 1921, **100**, No. 21

Pneumonia Study. C. S. Cole, New York.—p. 882.
Leukopenic Leukemia. N. E. Bril, New York.—p. 888.
Functional and Developmental Relations of Nervous Mechanism. D. A. Laird, Iowa City, Ia.—p. 890.
*Aneurysm of Vertebral Arteries. J. F. Morrow, Morgantown, W. Va.—p. 894.
Proposed Legislation Concerning Health Centers. J. H. Barry, New York.—p. 895.
*Gonorrheal Infection from Bath Tub. J. H. Dowd, Buffalo.—p. 897.

Nov. 26, 1921, **100**, No. 22

Roentgen-Ray Dermatitis. M. L. H. A. Snow, New York.—p. 927.
Bile Tract. L. W. Kohn, New York.—p. 931.
*Vitamins in Infant Feeding. F. Tweddell, Great Neck, N. Y.—p. 935.
*Diagnosis of Variola by Inoculation of Cornea of Rabbit. W. H. Hoffmann, Havana, Cuba.—p. 936.
Therapeutic Value of Training Center at St. Elizabeth's Hospital, Washington, D. C. W. M. Keena, Washington, D. C.—p. 939.
Stammering and Left Handedness. E. Tompkins, Pasadena, Calif.—p. 941.
*Acute Circumscribed Catarrhal Peritonitis. E. Palier, New York.—p. 943.
Therapeutic Value of Silver Arsphenamin. O. Berghausen, Cincinnati.—p. 944.

Aneurysm of Vertebral Arteries.—Morrow points out that aneurysmal dilatation of the vertebral arteries is a very rare condition. The medulla oblongata and many of the cranial nerves are damaged by the aneurysm as is manifested by the resulting compression bulbar paralysis. A correct diagnosis of vertebral aneurysm is difficult to make and it is likely to be made late in the progress of the disease. The treatment before the aneurysm has undergone a spontaneous cure is surgical, and symptomatic in the later stages of bulbar paralysis. The earlier the diagnosis of vertebral aneurysm is made, the more favorable will be the prognosis. In any event the prognosis must be considered grave.

Gonorrheal Infection from Bath Tub.—Dowd cites three cases of two young women who undoubtedly contracted gonorrhea from bathing in a tub in which some one having gonorrhea had taken a bath previously and infectious material adhered to the tub, thus infecting these two young women. He is absolutely convinced of the correctness of his assumption.

Egg Yolk for Infant Feeding.—Tweddell narrates his experience with the use of the yolk of a raw fresh egg in the feeding of infants who are not thriving as they should. One yolk is mixed with each day's feeding.

Diagnosis of Variola.—Hoffmann endorses Paul's test for variola on the basis of extensive clinical observation. The

practical procedure used in a suspicious case is as follows: A small quantity of the secretion from a suspicious pustule is removed by a sterilized knife or needle, and placed on a sterilized slide. The slide is put in a Petri dish and allowed to remain for some time. The dried secretion may be used for the test, as it has only to be moistened at the moment of inoculation of the animal, and for which either Ringer's solution or a few drops of a 50 per cent. glycerin solution in water may be used. With a small, sharp steel needle, previously sterilized by flame, there are made from three to five superficial horizontal incisions across the epithelium of the cornea of the rabbit's eye and as many in a vertical direction, crossing the first group of lines. A quantity of the secretion to be tested is placed on the surface of the cornea with a small, blunt, properly sterilized instrument, and thoroughly distributed by a closing movement of the eyelid. The inoculated animal is then placed in a cage and treated as a highly contagious case. If no specific, variolic infection of the cornea has taken place, the small traumatic lesions will be healed in twenty-four hours; and after forty-eight hours the cornea will appear absolutely clear and without irritation. If, however, the eye has become infected with variola virus, there will appear on the cornea, from thirty-six to forty-eight hours after injection, certain lesions which may be visible to the naked eye, but are much more clear under a low power lens. A definite irritation of the eye and some slight grayish epithelial prominences will be seen on the surface of the cornea. Forty-eight hours after inoculation the rabbit is killed, the eye is enucleated and is immediately placed in a solution of 4 gm. mercuric chlorid, 30 c.c. of 98 per cent. alcohol and 60 c.c. distilled water, and fixed for from one to two minutes. Then the cornea is separated from the eye in a line near the limbus. The cornea, lying in the solution, may then be inspected with a lens. If infection has taken place there will appear along the criss-cross lines previously made small, isolated circumspect prominences of a porcelain-white color. Similar lesions can be produced only when vaccine virus has been used. Forty-eight hours after infection has taken place, there will be found in the center of the variolic proliferation a desquamation of the epithelial cells; and after ninety-six hours there will be developed a round crateriform depression with a very sharply defined rim. This type of proliferation is pathognomonic of variola. These macroscopical lesions are so characteristic of variola that they allow of an undisputed diagnosis of this condition. For scientific purposes, however, the diagnosis can be confirmed by histologic examination.

Acute Circumscribed Peritonitis.—Under this term Palier describes what he believes to be a new disease. The characteristic symptoms are pain in the abdomen, with a sensation of fulness, discomfort, and pain on deep pressure, nausea and constipation. The only treatment of avail is to use salicylates. Palier prefers strontium salicylate which acts almost as a specific.

Northwest Medicine, Seattle

November, 1921, **20**, No. 11

Arteriosclerosis. W. Ophüls, San Francisco.—p. 301.
Selective Regional Localization in Arteriosclerosis. F. Epplen, Spokane, Wash.—p. 309.

Pennsylvania Medical Journal, Harrisburg

November, 1921, **25**, No. 2

Laboratory Diagnosis. H. G. Schleiter, Pittsburgh.—p. 77.
Correction of Sterility. F. H. Maier, Philadelphia.—p. 78.
Tuberculous Peritonitis. H. K. Mohler, Philadelphia.—p. 82.
Generalized Infection in Tuberculosis. A. J. Bruecken, Pittsburgh.—p. 85.
Association of Neuroretinitis in Each Eye with Unilateral External Ophthalmoplegia. G. O. Ring, Philadelphia.—p. 92.
Dimitry Modification of Mules Operation. F. C. Parker, Norristown, Pa.—p. 95.
*Treatment of Fibromyoma Uteri. S. E. Tracy, Philadelphia.—p. 99.
*Peculiar Pustular Condition. J. E. Rush, Pittsburgh.—p. 103.

Treatment of Fibromyoma Uteri.—While it is evident that radiotherapy has an extremely limited field in the treatment of fibromyoma uteri, nevertheless, Tracy says, it would seem that it is worthy of consideration in simple, uncomplicated neoplasms in patients, past the menopause. Even in this limited class of cases, the crux of the situation is in the diagnosis. What is considered a simple case, proves frequently to be a complicated one. The difficulty in the use of roentgen-ray treatment even in its limited field is the proper selection of cases. Radiotherapy may also be used cautiously with advantage on patients who do not have, strictly speaking, simple uncomplicated tumors, as follows: (*a*) In a patient whose general health is so impaired, from any cause, that she could not survive an operation, (*b*) in cases of marked anemia to control bleeding temporarily, until the patient is sufficiently restored to undergo an operation. If radiotherapy be used subsequent to operation in those patients in whom a malignancy coexisted, the results will probably be superior to those obtained if surgery alone be employed. When it is recalled that 70 per cent. of the cases of fibromyomata uteri are complicated, that of the patients subjected to operation, in addition to the removal of the tumor, the abdominapelvic pathology is eradicated, and that from 96 to 98 per cent. are cured of all symptoms, while in the same class of cases radiotherapy will give only 8 to 12 per cent. absolute cures; it would seem that the proper treatment in such cases, with the few exceptions mentioned, is surgery.

Peculiar Pustular Condition.—Rush proposes the name *B. sedgwicki* for the organism found by him in the pus removed from a pustule situated over the left fifth intercostal space a little posterior to the midaxillary line. This pus had a characteristic lilac color. An apparently destructive property of the pus discharged, denuded the epidermis. At no time was there any constitutional disturbance and no functional abnormalities were noted. When 25 per cent. argyrol was instilled into the cavity the wound closed. The causative agent was a bacillus varying from 4 to 8 microns in length and about 1 micron in width. The organisms showed a definite tendency to chain formation and frequently there were five to six cells in this chain; however a single cell was by no means rare. The chains were seldom straight but turned on themselves, frequently approaching a ring formation. Most of the organisms stained evenly but here and there the protoplasm of the cells showed a definite granular appearance. No cultures could be obtained.

South Carolina Medical Association Journal, Greenville

November, 1921, **15**, No. 11

Roentgen-Ray Study of Cranium and Accessory Sinuses. W. F. Ashmore, Greenville.—p. 276.
Use of Surgical Solution of Chlorinated Soda in Civil Practice; Report of Cases. J. R. Boling, Columbia.—p. 284.
Etiology and Treatment of Enteroptosis. D. E. Walker, Rock Hill.—p. 290.
Injuries to Spinal Cord; Plea for Early Operation. G. T. Tyler, Greenville.—p. 292.
Ureteral Stricture. T. M. Davis, Greenville.—p. 295.

Southern Medical Journal, Birmingham, Ala.

November, 1921, **14**, No. 11

Classification of Recurrent Convulsions. B. R. Tucker, Richmond, Va.—p. 847.
Treatment of Psychopathologic Cases in General Hospitals. T. A. Williams, Washington, D. C.—p. 851.
Early Diagnosis of Gastric and Duodenal Ulcers. S. Harris, Birmingham.—p. 854.
Diagnosis of Commoner Intestinal Parasitic Infections. C. C. Bass, New Orleans.—p. 863.
Causes and Management of Athrepsia. W. Weston, Columbia, S. C.—p. 865.
Feeding Problem in South with Particular Reference to Older Child. C. H. Rice, Jr., Montgomery, Ala.—p. 866.
Is Effectual Rural Control of Contagious Disease Possible? W. S. Leathers, Jackson, Miss.—p. 870.
Concerning Evident Though Neglected Fact That Overconfidence in Laboratory Minus Adequate Clinical Evidence Equals Many Blunders in Diagnosis and Treatment. E. G. Ballenger and O. F. Elder, Atlanta, Ga.—p. 876.
Kidney Tuberculosis: Is It Always Necessary to Remove Kidney for Cure? C. E. Barnett, Fort Wayne, Ind.—p. 881.
Ureteral Stricture in Male. A. E. Goldstein, Baltimore.—p. 885.
Surgical Significance of Persistent Abdominal Pain. J. W. Barksdale, Winona, Miss.—p. 893.
Appendicitis in Childhood. F. Roberson, Durham, N. C.—p. 897.
Special Methods Used in Reconstruction Work. J. S. Davis, Dallas, Texas.—p. 899.
Ideal Mastoid Operation. G. O. Sharrett, Cumberland, Md.—p. 903.
Practicability of Effecting a Complete Atrophy of Tonsils by Use of Radium. W. A. Wells, Washington, D. C.—p. 907.

Principles of Organization in Group Medicine. S. R. Roberts, Atlanta, Ga.—p. 910.
Group Medicine. B. B. Steedly, Spartanburg, S. C.—p. 912.
Deductions Drawn from Four Years' Experience in Group Practice. M. B. Stokes, Houston, Texas.—p. 914.
Group Medicine. W. Barrow, Lexington, Ky.—p. 920.

Surgery, Gynecology and Obstetrics, Chicago

November, 1921, **33**, No. 5

*Surgical Significance of Hepatic Incompetency. W. J. Mayo, Rochester, Minn.—p. 463.
Technic of Gallbladder Surgery in Presence of Jaundice. G. W. Crile, Cleveland.—p. 469.
*Facial Paralysis. A. Gibson, Winnipeg, Man.—p. 472.
Movable Bodies in Knee Joint. O. F. Lamson, Seattle, Wash.—p. 490.
*Epidermoid Cysts. H. H. Sherk, Pasadena, Calif.—p. 494.
*Intussusception of Ileum in Adults, Due to Benign Tumors. M. H. Biggs, Rutherfordton, N. C.—p. 499.
Subdiaphragmatic Abscess. A. L. Lockword, Rochester, Minn.—p. 502.
*Treatment of Tumors of Bladder Without Local Excision. B. C. Corbus, Chicago.—p. 517.
*Physiologic Method of Tendon Transplantation. L. Mayer, New York.—p. 528.
Case of Cyst of Mesentery. R. M. Carter, Green Bay, Wis.—p. 544.
Two Cases of Actinomycosis of Cecum. F. W. Griffith, Asheville, N. C.—p. 548.
*Cases of Nonunion of Fractures in Lower Third of Tibia. E. L. Eliason, Philadelphia.—p. 551.
*Kraurosis Vulvae and Inguinal Adenitis of a Malignant Nature. F. Reder, St. Louis.—p. 554.
Case of Bilharziasis. R. V. Day, Los Angeles.—p. 557.
Large Mycotic Embolic Arteriovenous Aneurysm of Femoral Vessels. R. Floyd, New York.—p. 560.
Gastroileostomy. H. Cohen, New York.—p. 564.
*Rubin Test Simplified. H. D. Furniss, New York.—p. 567.
Suction Apparatus for Treatment of Empyema. J. W. Snyder, Rochester, Minn.—p. 568.
*Radium in Cancer of Bladder. G. G. Smith, Boston.—p. 570.
Treatment of Gonococcal Arthritis with Aspirated Synovial Fluid Injected Intramuscularly. E. G. Ballenger and O. F. Elder, Atlanta, Ga.—p. 574.

Surgical Significance of Hepatic Incompetence.—Mayo emphasizes that no operative proceduce which is not essential to the immediate recovery of the patient should be undertaken in the presence of intense jaundice. For example, after removing stones from the common duct in the cholemic patient, cholecystectomy is seldom advisable.

Operation for Facial Paralysis.—Gibson bisects the hypoglossal nerve distal to the point at which the thyreohyoid branch is given off, swings it upward and anastomoses it with the proximal extremity of the distal segment of the facial nerve. There is loss of power in one half the tongue as a result of this procedure but this does not interfere with its functions.

Epidermoid Cysts.—Sherk asserts that epidermoid cysts are very seldom recognized, and, to the majority of operators, are entirely unknown. They are almost always mistaken for sebaceous cysts. The pearly, horny, and laminated contents make their recognition easy.

Intussusception Caused by Benign Tumors.—In the case reported by Biggs the intussusception was situated in the ileum and was caused by a myxoma, which is one of the rarest of benign growths found in the intestine. Considering the intestine as a whole, one seventh of the cases of intussusception are due to malignant growths, while one fifth are due to benign tumors. Of tumors of the large bowel causing this lesion the proportion between benign and malignant tumors is about equal, while in the small intestine benign and malignant tumors bear the relation of two to one.

Diathermy for Bladder Tumors.—The "burning back" of the ureter by diathermy is offered by Corbus as a method of treating all vesical tumors without the use of any cutting procedure.

Tendon Transplantation.—Mayer discusses tendon transfers, "free" transplants and tendolysis pointing out the indications for each procedure and the operative technic.

Experimental Study of Nonunion of Tibia Fractures.—In eight dogs, in addition to producing an experimental fracture of the tibia the anterior tibial artery was doubly ligated and severed. In four of the cases the nerve was also cut. In none was there any especial attempt to get perfect reduction of the fracture. At the end of four weeks all the dogs were killed and the bone specimen removed and examined grossly and with the roentgen ray. In four controls the union was solid and the callus formation apparently uniform. In the eight ligation cases there was union, but in five of these the union was not as firm as in the controls. The cutting of the nerve seemed to have no effect upon results. The roentgen ray showed no demonstrable difference in the callus between the controls and the ligated cases. In Eliason's opinion this evidence points to the fact that there is a lessening of the blood supplied to the lower fragment in these cases, which condition is associated with lessened bone reparative activity.

Kraurosis Vulvae and Malignant Inguinal Adenitis.—In the two cases of kraurosis reported by Reder a malignant degeneration was demonstrable. The one case exhibited a malignancy of the left labium with involvement of the left inguinal glands, the other case presented a malignancy in the region of the fossa navicularis encroaching on both the right and left labium and involving the glands of the right and the left inguinal region.

Rubin Test Simplified.—Furniss does not believe it necessary to inject such large quantities of carbon dioxid as Rubin uses. He asserts that no more than 30 c.c. need to be injected.

Radium in Bladder Cancer.—From Smith's study of cases it would appear that 400 millicurie hours, given with a screening of 0.5 mm. or 1.0 mm. silver, is a dosage which may be used in the treatment of bladder cancer without any very marked reaction. Large doses in bladders which are subject to the alternate diastole and systole of urination, are likely, to set up a reaction which is very painful. If the bladder is drained suprapubically, greater doses may be used, and if the urine is entirely excluded from the bladder, doses of 1,000 millicurie hours do not cause discomfort. The duration of a reaction of moderate severity is from four to six weeks. Repeating the treatment in less than six weeks gives, therefore, cumulative effect. If, however, no reaction has developed in three weeks after the first treatment, it is proper to go ahead with the second treatment.

Virginia Medical Monthly, Richmond

November, 1921, **48**, No. 8

*Diverticulitis of Sigmoid. W. J. Mayo, Rochester, Minn.—p. 427.
Modern Medicine—Scientific Spenthrift. A. Stengel, Philadelphia.—p. 433.
Concerning Renal Complications of Ureteral Stone and Their Prevention. L. Buerger, New York.—p. 439.
Humanistic Devotion. S. Harnsberger, Warrenton, Va.—p. 452.
Nature and Treatment of Cancer. J. Shelton Horsley, Richmond.—p. 454.
*Public Health and School. E. G. Williams, Richmond.—p. 459.
Medical Education in Virginia. S. McGuire, Richmond.—p. 463.
The Relation of Medicine to Law. Judge F. B. Hutton, Abingdon, Va.—p. 467.
Atrophy of Lymphatic and Tonsillar Tissue by Radium and Roentgen Ray. C. A. Simpson, Washington, D. C.—p. 473.

Diverticulitis of Sigmoid and Cancer.—Nearly one third of the cancers of the sigmoid removed by the Mayos have had their origin in diverticulitis. In some of these cases, until the specimen has been examined microscopically, it could not be determined whether the condition was a chronic stenosing diverticulitis, carcinoma or a combination of both. Resection, therefore, in the chronic tumor forming type of diverticulitis must often be performed as would be done for carcinoma of the sigmoid. The death rate following resection for diverticulitis of the sigmoid has been approximately 10 per cent., about the same as for cancer, and the radical operation is, therefore, not to be lightly undertaken.

Teaching Prevention in Public Schools.—Williams speaks on the promulgation through the public schools of a systematic course of instruction in the principles of prevention. This course is to be approved by both the state board of health and the state board of education. In addition to the regular curriculum, a scheme of health leagues has been organized in many schools whereby a spirit of rivalry and competition in principles of personal hygiene are taught by actual practice of them. In virtually every schoolroom of the state, there is posted a placard containing two rules which, if followed, will prevent that large group of diseases carried by the secretions of the mouth and nose. In this group are measles, whooping cough, diphtheria and scarlet fever.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

October, 1921, No. 255

Immediate Effects of Roentgen Rays on Blood Lymphocytes. S. Russ.—p. 146.
Fractures of Ulnar Styloid. C. P. G. Wakeley.—p. 150.
Case of Epilepsy. W. E. Boyd.—p. 152.
Cases Treated by Galvanism Applied to Head. M. Rathbone.—p. 155.

British Medical Journal, London

Nov. 5, 1921, **2**, No. 3175

*Causes and Prevention of Blindness. N. B. Harman.—p. 727.
Advisability of Early Operation in Strabismus Convergens. W. B. I. Pollock.—p. 733.
Treatment of Corneal Ulcers. J. V. Paterson.—p. 734.
Nodular Keratitis of South Arabia. A. Macrae.—p. 739.
*Erythema Nodosum: An Acute Specific Fever. J. O. Symes.—p. 741.
*Mountain Climates in Health and Disease. B. Hudson.—p. 742.
Eleven Thousand Cases of Spinal Analgesia. A. A. Morrison.—p. 745.
Action of "Bayer 205" on Trypanosoma Equiperdum in Experimentally Infected Mice. C. M. Wenyon.—p. 746.

Causes of Blindness.—Harman's remarks are based on an analysis of 4,288 cases. Of sixty-three blind infants, thirty-six had surface inflammations of the eyes, thirty-one due to ophthalmia neonatorum and five to purulent conjunctivitis of later months. There were seven cases of inflammations within the eyes, two due to iridocyclitis of great severity, two to cerebrospinal meningitis, five to optic atrophy or defect. There were nineteen cases of congenital defects. The total number of blind and partially sighted children brought into this inquiry is 3,300. Surface inflammations were responsible for 699 cases of which 299 cases were the result of ophthalmia neonatorum. Of 919 cases of inflammation within the eyeball, by far the greater number are of congenital syphilitic origin, interstitial keratitis, iritis or iridocyclitis, disseminated choroiditis with or without optic atrophy. Congenital defects were present in 408 cases and were of great varieties, defects of the crystalline lenses heading the list with 248 cases. The cases of high myopia not due to syphilis numbered 1,235. Harman also analyzes blindness in 925 persons of all ages as ascertained in private practice.

Nature of Erythema Nodosum.—Fifty cases of erythema nodosum were subjected to analysis by Symes with the idea of proving that this is an acute specific infectious fever and not a blood dyscrasia due to rheumatism, tuberculosis, or other chronic constitutional weakness. The strong points in favor of the theory that erythema nodosum is an infectious fever are the proof that it may be transferred from person to person and may occur in small localized outbreaks and in epidemic waves; a definite seasonal incidence and constant age incidence; systematic distribution of the rash; evidence of relapses, and conferment of immunity. On the other hand, is the constant association of erythema nodosum with other diseases, such as tuberculosis, measles, and minor conditions of ill health. The heavy incidence of the disease in girls at and about the age of puberty is difficult to explain on any ground of infection.

Value of Mountain Climate in Tuberculosis.—Before deciding on any particular climate for a tuberculous patient Hudson says two factors must be considered: the demand for tissue change made by the climate and the individual patient's power of responding to this demand. A young robust person with sound digestion, heart, etc., and with much reactive power and resistance, needs a wholly different type of climate from the elderly and feeble patient, with poor digestion indifferent kidneys and weak circulation. In mountain climates where there is a demand for an increased and higher rate of metabolism, people who do best are naturally those able to respond and react to this increased call on the constitution. Thus it is that the early cases in young and middle-aged people are those which do best in the mountains; and next in order comes the more advanced or partially arrested case, when, however, the general constitution is still good, and the patient can respond satisfactorily to the demands of the mountains. The second group often derives great benefit from the extra stimulation and "flip" caused by the climatic conditions of a mountain resort. Another important point to be thought of is the mental side of the question; patients who have to lead the sedentary quiet life necessary to the treatment of tuberculosis will be more cheerful and in better spirits in the bright sun and clear blue skies of an Alpine climate, especially in the winter months, than in the average weather conditions prevailing at lower levels.

Nov. 12, 1921, **2**, No. 3176

Need for Cooperative Thought in Surgical Organization. H. J. Stiles.—p. 775.
*An Investigation into Circulation Through Lungs. S. W. F. Underhill.—p. 779.
Early Recognition and Corrective Treatment of Occipito-Posterior Presentations. R. C. Buist.—p. 782.
*Pulmonary Tuberculosis in Infant. A. G. Shurlock.—p. 783.
Hemochromatosis. J. S. Dunn and W. H. M. Telling.—p. 783.
Streptococci. J. M. Beattie and J. H. Dible.—p. 786.
*Blood Picture in Scurvy, with Particular Reference to Platelet. S. P. Bedson.—p. 792.
*Chronic Duodenal Ileus. D. P. D. Wilkie.—p. 793.
Local Anesthesia in Reduction of Fractures. R. A. H. Fulton.—p. 796.
Local Abscess Followed by Erythema Scarlatiniforme. F. A. Murray.—p. 796.

Study of Circulation Through Lungs.—The adaptability of the pulmonary circulation was tested by Underhill by imitating in animals, as far as is possible, the condition of embolism of one main branch of the pulmonary artery as it occurs in man. The general effects of ligature of the left pulmonary artery were studied in animals with the chest open under artificial ventilation. A further series of experiments was performed, in which, after the left pulmonary branch had been ligated, the chest was closed and the artificial ventilation withdrawn, the animal being allowed to breathe naturally. Postmortem examination of the lungs was always made, and frequently pieces were taken between ligatures for section, both during the course of the experiment and at the end. In a second series of experiments the right bronchus was clamped or tied. It was found that ligature of the left pulmonary artery in cats (with the chest open and under artificial ventilation) causes a rise of pulmonary blood pressure of from 25 to 60 per cent.—usually about 40 per cent. There is no effect on the carotid blood pressure, pulse rate, output of the heart, or its state of dilatation. The healthy heart, therefore, can accommodate itself without difficulty to sending the same volume of blood through one lung only in a given time as it previously sent through both lungs. No mechanism producing slowing of the heart from rise of pulmonary blood pressure was demonstrated in these experiments. If the chest is closed after the artery has been ligatured, the animal remains in good condition—in fact, frequently its condition is improved. Its respiratory rate is usually faster than normal, frequently about double, but the depth tends to be shallow. The saturation of the blood after ligature is about 75 per cent.; if the artificial ventilation is increased (within normal limits), complete saturation can be obtained. This has not been the case, however, with animals in which the chest has been closed and the artificial ventilation discontinued; in these the saturation remains at about 70 per cent. Examination of the lungs shows an increased quantity of blood in the right lung, due to twice the normal volume flowing through it in a given time. The left lung after ligature of the left pulmonary artery, under artificial ventilation, contains almost no blood, except a little in the veins; on the other hand, after the chest has been closed and the animal allowed to breathe naturally, it contains usually more blood than the right lung, exhibiting a varying degree of congestion. This blood comes from the bronchial arteries and stagnates in the pulmonary capillaries. Ligature of the right bronchus (in cats with the chest open and under artificial ventilation) causes a small immediate rise in pulmonary blood pressure without affecting the carotid pressure. The saturation of the blood has always been under 90 per cent., even when the artificial ventilation has been increased. There is, therefore, presumably still a certain amount of circulation through the right lung under these conditions.

Pulmonary Tuberculosis in Infant.—In Shurlock's case the mother of the baby developed a cough in the fifth month of pregnancy, and the diagnosis of pulmonary tuberculosis was made. The child was born at full term and was immediately

taken away to be looked after by the mother's sister, who lived in a different house. It was taken to the mother nearly every day, but remained in the room with the mother for about ten minutes at each visit. The mother took the baby in her arms, but was careful not to kiss him on the lips. She died from pulmonary tuberculosis two months after the baby's birth. The baby was at first fed on diluted cow's milk, but as he did not thrive, he was given condensed milk diluted to a suitable strength. Wasting became more marked, and signs were detected in the lungs. Diarrhea and vomiting set in and the child died at the age of 3 months. In the left lung there was an area 1 cm. square of tuberculous consolidation, partly caseous at its center. From the consolidated area miliary tubercules extended. By palpation and section the caseous mass could be traced into caseous glands in the hilum of the left lung. The right paravertebral glands and angular glands were enlarged. Parenchymatous degeneration was present in the liver and kidneys. Several doubtful tubercles were found under the capsule of the spleen. Thin buff-gray contents were found throughout the intestines; a score of shallow erosions extended along the line of the mesenteric attachment of the lower ileum; the mesenteric glands were 0.5 cm. in diameter.

Blood Picture in Scurvy.—In scurvy produced experimentally in guinea-pigs and monkeys, and in one human case, Bedson found the platelets normal in number. The red cells in some cases showed an increase in number, this condition coinciding with a "prescurvy" or incipient scurvy stage. In the acute stages of the disease, particularly where hemorrhages were numerous, the number of red cells fell to slightly below the normal. No variations in the total and differential leukocyte count were observed.

Chronic Duodenal Ileus.—Wilkie suggests that chronic duodenal ileus is probably the predisposing cause to acute dilatation of the stomach, both postoperative and spontaneous. It is the pathologic basis of recurring bilious attacks. It may be found in association with duodenal and gastric ulcer. Its relationship to chronic biliary and pancreatic infections, while not yet established, is worthy of further study. In cases of rapid collapse and death after the perforation of a duodenal ulcer the signs of chronic duodenal obstruction should be looked for.

Dublin Journal of Medical Science

October, 1921, **4**, No. 20

Reconstruction of Joints. W. I. de Courcy Wheeler.—p. 433.
Case of Diffuse Scleroderma. J. Craig.—p. 453.
Disability Associated with Congenitally Separate Tuberosity of Tarsal Scaphoid. A. K. Henry.—p. 454.

Lancet, London

Nov. 12, 1921, **2**, No. 5124

*Medical Aspects of Some Urinary Diseases. T. Horder.—p. 989.
*Postural Proteinuria. G. A. Harrison.—p. 991.
*Essential Causes of Adenoids and Their Association with Rickets. H. Merrall.—p. 994.
Unhealthy Tonsils and Cervical Adenitis. W. G. Howarth and S. R. Gloyne.—p. 997.
Study of Dysentery in Field, with Special Reference to Cytology of Bacillary Dysentery and Its Bearing on Early and Accurate Diagnosis. J. Anderson.—p. 998.
Shrapnel Injury to Petrous Bone. H. L. Whale.—p. 1002.

Importance of Infection as Cause of Urologic Diseases.—Horder stresses the importance of recognizing the presence of an infection in cases of enlarged prostate, kidney stone and other urinary lesions.

Postural Proteinuria.—Harrison is of the opinion that true proteinuria probably never reappears in the recumbent position in cases of cyclic proteinuria. If proteinuria does recur while the patient is lying in bed an organic lesion should at once be suspected. True proteinuria is emphasized because it is obviously necessary to make certain that the protein does not come from other parts—e. g., the vagina. Posture appears to be an important factor in causation but not the only factor, because in three cases on certain days protein disappeared from the urine while still in the upright position. The albuminuria of a small organic kidney lesion may be postural in type, or in other words, the amount of protein may fluctuate in organic albuminuria so as to simulate a condition of functional cyclic albuminuria. In the latter condition, however, once the protein has disappeared from the urine as a result of lying down, it probably never reappears while the ordinary recumbent position in bed is maintained. It is possible that in certain cases of mild organic disease of the kidney (or other part of the urinary tract) the proteinuria is postural in type simply owing to the drainage of the foci of disease in the erect attitude. The fact that in postural proteinuria the "albumin" may appear, then disappear, and then reappear (the erect posture being maintained throughout) should operate against claiming cures as a result of any particular treatment.

Cause of Adenoids and Rickets.—Merrall believes that the essential element in the causation of adenoid vegetations is the overworking of the lymphatic glands situated behind the soft palate by repeated colds and by the exanthemata. Nasopharyngeal catarrh extends into the alimentary canal and affects both digestion and assimilation; exaggerated lymphocytosis and swollen lymph glands rapidly lose their protective influence owing to fibroid changes, besides the swallowing of large quantities of infected mucus, a drain on the system from the overproduction of lymphocytes causing anemia—to say nothing of the abnormal secretion of the connective-tissue element containing mucin and of the lessened alkalinity of the blood.

Medical Journal of Australia, Sydney

Oct. 8, 1921, **2**, No. 15

Indications for Blood Transfusion and Methods of Testing Blood of Donors. V. Hurley.—p. 275.
Blood Transfusion. W. D. Upjohn.—p. 279.
Limping as a War Injury. W. L. Potter.—p. 284.
Two Fatal Cases of Acute Asthma in Children. J. de B. Griffith.—p. 287.

Oct. 15, 1921, **2**, No. 16

Medical Practice of To-Day. A. C. F. Halford.—p. 303.
Hibb's Vertebral Fusion Operation. Summary, with Notes upon Operation in Two Cases. A. S. M. Tymms.—p. 309.
Case of Acute Frontal Sinus Suppuration, Followed by Multiple Frontal Lobe Abscesses. R. G. Brown.—p. 313.
*Case of Subacute Volvulus of Sigmoid Colon with Pulmonary Features. H. Harbison.—p. 315.
Uterine Incisional Hernia. J. C. Robertson.—p. 316.

Subacute Volvulus of Sigmoid Colon.—The subacute onset and course, the leukopenia, the remittent temperature, the spurious diarrhea and the pulmonary features, make the case cited by Harbison an extremely interesting one. The differential diagnosis was between intestinal obstruction, diaphragmatic hernia, enterica, tuberculous peritonitis, or some supradiphragmatic lesion, such as pneumothorax. Laparotomy revealed an enormous distention of the large bowel, with a volvulus of the sigmoid, which presented two and one-half twists in a counter-clockwise direction. This was untwisted, the distended bowel was punctured and deflated, the puncture invaginated and sutured and the abdominal wall closed up. The patient died. At the postmortem examination the following pathologic changes were observed: A terminal peritonitis was found, associated with a colossal dilatation of the colon, 22.5 cm. in diameter, which, while affecting the whole of the large intestine, especially involved the sigmoid descending colon and splenic flexure. The splenic flexure was ballooned in direct relationship to the left side of the diaphragm, which was elevated to the third interspace. The lower lobe of the left lung was completely collapsed, being solid, blue and airless and sank in water. The heart was displaced across to the right side of the chest, so that less than one third of its area was situated to the left of the sternum. It was found that the splenic flexure and transverse colon were enabled to produce such an intensive local effect on the left half of the diaphragm owing to the almost complete absence of the left lobe of the liver, which organ presented a compensatory hypertrophy in the shape of a right Riedel's lobe. The mesosigmoid was remarkable. While its base was not more than 7.5 cm., its length and height were 30 cm. and 22.5 cm. respectively. In consequence, there was great mobility of the sigmoid flexure, with every opportunity for twisting on a limited pedicle. The interior of the colon was filled with fluid feces, while its walls were atonic, thin, somewhat inflamed and markedly ulcerated, the closely set stercoral ulcers extending to the muscular coat.

Bulletin de l'Académie de Médecine, Paris

Oct. 18, 1921, **86**, No. 33

*Experimental Increase of Phagocytosis. G. Yoannovitch.—p. 189.
*Diphtheria in the New-Born. S. Brindeau.—p. 191.
Pseudohypertrophic Muscular Atrophy. Rémond and Minvielle.—p. 192.

Experimental Exaggeration of Phagocytosis for Tubercle Bacilli.—When human tubercle bacilli are injected into pigeons, there is such active phagocytosis around the focus that it is rapidly walled in and the active phagocytes extinguish the focus. Yoannovitch relates that he was able to confer this same active phagocytosis on guinea-pigs so that the focus was obliterated in them also. The means by which he accomplished this was by inducing resorption of the bodies produced by fermentative destruction of tubercle bacilli and administered by parenteral injection. This is a form of protein therapy, but with a supplementary specific factor. He exposed the tubercle bacilli to the action of pepsin in a 0.3 per cent. solution of hydrochloric acid for two weeks, and then to the action of trypsin in an alkaline solution for another two weeks, and then mixed the two and injected the mixture subcutaneously in guinea-pigs. The result was an activation of phagocytosis which showed that conditions in the guinea-pig had been artificially transformed into conditions like those in the naturally refractory. This was confirmed, he says, by the microscope in each instance.

Diphtheria in the New-Born.—Brindeau cites a recent small epidemic of puerperal fever for which the diphtheria bacillus was responsible, and states that, in his own service, nine newborn infants presented diphtheric coryza and all died but one, notwithstanding antitoxin treatment. After this he injected each infant at birth with 5 c.c. of antitoxin, and the epidemic was arrested at once.

Bulletin Médical, Paris

Oct. 29, 1921, **35**, No. 44

*What We Should Ask of Radiography. E. Sergent.—p. 857.
*Tuberculous Tracheobronchial Glands. H. Méry.—p. 863.
*Tuberculous Antibodies. P. F. Armand-Delille.—p. 866.

Radiography of Pulmonary Tuberculosis.—Sergent reviews what the physician can and should ask of radiology in regard to the diagnosis and the course of pulmonary tuberculosis. It is important and indispensable for the differential diagnosis and for the diagnosis of the location and estimation of the course. It has largely contributed to reveal the truth in regard to tuberculosis as a disease of childhood which pursues its course insidiously or noisily all through life. Béclère has a set of roentgenograms of the same person taken serially during childhood and into adult life—the findings corresponding exactly with the interpretation of the ordinary run of cases at different ages.

Tuberculous Tracheobronchial Glands.—Méry tabulates the physical signs of mediastinal and hilus tuberculous glands, and the means to determine whether the disease process is active or healed. The clinic and radiology, and possibly the reaction of fixation, will reveal the active cases, and we must not alarm the family on account of some old calcified and healed process.

Tuberculosis Antibodies.—Armand-Delille says that two good antigens are now available for research on the antibodies in the blood serum of the tuberculous. These antigens are Besredka's egg culture and Bocquet and Nègre's methylic antigen. The formulas for both have been published, and they allow serial titration of the antibody content by the deviation of complement. In 109 tuberculous patients, 7 healthy persons, and 10 other subjects known to have an unusual antibody content, tests with these two antigens showed that the reaction is specific, and that the titration of antibodies corresponds on the whole to the clinical manifestations, although 3 clinically healthy gave a weak reaction. It is possible that these 3 have some latent focus, enough to induce production of a low titer of antibodies. The deviation of complement reaction does not parallel the skin tuberculin reaction, and does not have the same significance. It does not occur until the focus is well established, but systematic study of it offers promise of progress.

Bulletins de la Société Médicale des Hôpitaux, Paris

Oct. 21, 1921, **45**, No. 29

*Arsenical Erythroderma. Gougerot.p. 1339.
*Syphiloid Hypochromia of the Neck. Gougerot.—p. 1347.
*Hiccup with Erysipelas. Casteran and Railliet.—p. 1350.
*Otitis in Young Infants. M. Renaud.—p. 1352.
*Heart Block of Traumatic Origin. C. Laubry et al.—p. 1363.
*Arsenicals Arrest Coagulation in Blood for Transfusion. C. Flandin, A. Tzanck and Roberti.—p. 1373.
*Heliotherapy in Tuberculous Peritonitis. P. F. Armand-Delille.—p. 1374.

Arsenical Erythroderma.—Gougerot protests against the assumption that because arsenical treatment has been vigorous enough to induce an erythroderma, the syphilis has been necessarily conquered. In seven wartime cases he witnessed recurrence of symptoms afterward in one instance, and one in seven cases this year, but none in 1920.

White Patches on Neck Suggesting Syphilis.—Gougerot calls attention to the white spots sometimes left by the lesions of ordinary eruptions which may be mistaken for syphilitic leukomelanodermia. They are usually noticed as the skin around tans in summer; search elsewhere on the body will generally reveal other traces of the eruption or seborrheic eczema.

Persisting Hiccup with Erysipelas.—The hiccup developed with the erysipelas, and persisted for fourteen days, very severe, sometimes continuing during sleep. There were no signs of epidemic encephalitis and no other cases of hiccup were known in the region.

Otitis in Infants.—Renaud remarks that of the 39 infants in his infant ward on September 11, it happened that 34 required treatment for otitis, and 3 were under observation for it. The ears seemed to be sound in only 2. Gastrointestinal disturbances used to be the main clinical picture in his *pouponnière*, but in the last few months since he discovered the amazing prevalence of otitis in the infants, instead of devoting his energies to prescribing and modifying the way the infants are fed, he has focused his attention on the ears. The diagnosis is based on cultivation of pus aspirated by puncture; the tympanic membrane may look red or normal. When the child is growing worse, the otitis may be surmised even without an examination. In 50 cases of the kind the otitis was well established when the child was brought for treatment of its gastro-intestinal disturbance. In the majority, the otitis passes into a slow subacute phase, after the stormy infectious-toxic onset, but this leads to athrepsia, analogous to the cachexia of extensive suppuration. In 90 per cent. of the cases the otitis was bilateral. Even although there may be no signs of mischief on the other side, opening up the mastoid may reveal it full of pus. One robust 16 months infant had been emaciated by six weeks of a dysenteriform enteritis when Renaud first saw the child. The torpor then indicated meningitis, but the tympanic membrane in one ear was pink, and puncture released a flood of pus from each ear, and recovery was soon complete. In the discussion that followed, Hallé commented on Renaud's "rather adventurous raid into nursling pathology." He stated that mucopus from the throat may get into the middle ear when the ear itself is sound. The pus may even spread to the mastoid in this way, as the child lies on its back, and thus may simulate mastoiditis at necropsy. Otitis should be suspected whenever the color of the child's face is seen to vary abruptly during the day, now pale, now congested.

Traumatic Heart Block.—After a contusion of the left chest five years ago, the young woman's heart beat tumultuously for a day and then quieted down. As this occurred, the pulse dropped permanently to 40.

Arsenical-Treated Blood for Transfusion.—Flandin and his co-workers utilize in transfusion the property of the arsenicals to prevent coagulation. They draw the blood into a glass containing a little of the solution of the arsenical, and reinject it at once into the vein of the patient.

Tuberculous Peritonitis.—Armand-Delille reports the cure under heliotherapy for four months at Paris of a young woman in grave cachexia with considerable ascites. Three laparotomies had failed to arrest the tuberculous peritonitis. The sunbaths were taken, naked, for three hours morning and afternoon.

Journal de Radiologie et d'Electrologie, Paris

September, 1921, **5**, No. 9

*Deep Roentgen-Ray Therapy. Béclère.—p. 385.
Electric Treatment of Bladder Disease. Courtade and Cottenot.—p. 392.
Pneumoperitoneum in Radiodiagnosis. L. Mallet.—p. 401.
Radiography of the Fifth Lumbar Vertebra. J. Garcin.—p. 410.
Forward Luxation of Mediocarpal Joint. Douarre.—p. 413.
Dangers of Irradiation and Means to Avoid Them. A. Broca.—p. 414.

Deep Roentgen-Ray Therapy.—Béclère expatiates on the great progress realized by the deep irradiation now possible, but he warns against exaggerated hopes, and cites instances of failure and also of direct injury. Several German writers have reported dysenteriform symptoms following cross-fire exposures of the uterus, with bloody stools and membranous exfoliation. These symptoms generally subside harmlessly, but a few instances have been published of rebellious ulceration in the bowel or ultimate stenosis, sometimes fatal, after exposure of the uterus. Some statistics recently published compare ninety cases of sarcoma treated with roentgenotherapy before 1905, with the technic then in vogue, and a series of 117 sarcomas treated by Seitz and Wintz during and since 1919. In the first series 20 per cent. of the tumors disappeared under the exposures, and in the second series 33.33 per cent.; this is a gain, but not so much as might be anticipated. The proportion of rebellious cases is about the same in both series, ranging from 20 to 33.33 per cent. Evidently the susceptibility of sarcomas and carcinomas varies from case to case, and may be slight. Kehrer's practice is to determine the susceptibility beforehand; for this he gives a preliminary irradiation with radium for six hours, and then, four days later, excises a scrap for microscopic examination. This reveals the type of the neoplasm and the effect of the irradiation. By this means he can estimate whether to apply radium alone or associated with the roentgen rays, or whether surgical extirpation offers better prospects of a cure, the cancer cells proving resistant to the rays.

Journal d'Urologie, Paris

September, 1921, **12**, No. 3

*Transplantation of Testicles. G. Bolognesi.—p. 153.
*Giant Bladder Stones. R. H. Kummer and P. Brutsch.—p. 175.
Malformation of External Genital Organs in Woman. L. Sencert and A. Boeckel.—p. 193.

Testicle Transplants.—Bolognesi expresses surprise that so little attention has been paid to separating the two elements, the seminiferous and the interstitial, in estimating the effect of transplantation of testicles. He has succeeded in experimentally reducing the testicle to a small organ consisting exclusively of interstitial tissue. He has then transplanted these testicles, thus reduced to a mere "interstitialoma," by total epididymodeferentectomy. The dogs and laboratory animals receiving these implants never displayed any modification in the general or sexual function suggesting any influence from the implanted testicles. There were aged animals among them but none showed any rejuvenating influence from the grafts. One experiment was made on a man of 18 with marked infantilism; no secondary sexual characters had developed, and no effect was evident after implantation of the interstitialoma testicle from a dog. Bolognesi's research thus tends to demonstrate that the rejuvenating influence from testicle transplantation cannot be due to the interstitial element. He reviews the literature on testicle transplantation, all the data presented confirming the importance of the seminiferous tissue, and proving the absolutely negative share of the interstitial element in the rejuvenating influence from operations involving testicles.

Giant Bladder Calculi.—Kummer and Brutsch have compiled 104 cases of bladder calculi weighing over 100 gm., and tabulate the details with the bibliographic references. They have only one feature in common; that is, the absence of any symptoms until they are far advanced. The combination of a free calculus with one in a diverticulum was known in only 3 of the cases, including one described in detail in which the three calculi weighed 585 gm. in all, with a total bulk of 363 c.c. In 6 of the cases listed, the calculus weighed from 1,020 to 1,816 gm., and all recovered after its removal by suprapubic incision except the one with the very largest. There are only 4 women in the entire list.

Paris Médical

Oct. 22, 1921, **11**, No. 43

*Eruption on Children's Hands. G. Thibierge and R. Rabut.—p. 309.
*Minor Ocular Signs of Diabetes. F. Terrien.—p. 312.
*Hypotensive Action of Epinephrin. J. Girou.—p. 315.
*Micrococcus Catarrhalis Meningitis. Cot and Robert.—p. 318.
*Prevention of Measles. G. Blechmann and Geismar.—p. 321.

Spring Eruption on Hands of the Young.—The eruption is papulous and pruriginous, and in all but two of the nine cases reported the children, from 4 to 12 years old, had not left the city. No contact with flowers was known. The cases all developed in May. Some improved under ichthyol, others on talcum powder, others under camphor or sulphur salve. It is liable to be mistaken for scabies. The eruption was on the back of the hands, and in some of the children on the back of the neck also. It did not seem to be contagious.

The Ocular Signs of Diabetes.—Terrien refers to disturbances in refraction and accommodation as minor ocular signs of diabetes. The frequency and the suddenness of their onset may have diagnostic value. Myopia in particular is a frequent complication of constitutional disease, especially syphilis and diabetes. A congenital predisposition is probably the main factor, but the intercurrent disease is the occasional cause, promoting distention while reducing the resisting powers of the tissues.

Epinephrin May Reduce the Blood Pressure.—Girou affirms that our conception of the action of epinephrin needs revision. In more than 100 test subcutaneous injections of 1 mg. epinephrin, given to stimulate the weakening heart, the blood pressure dropped in 80 per cent. The trend to larger doses is more evident every day, although we are still far from Kircheim's 48 mg. a day. Girou contends that the doses in vogue should be much larger, and in his own practice, both medical and surgical, and in asthma, and with a local anesthetic, he goes beyond the textbook doses. He cites some American publications to sustain his statement that small doses lower and large doses raise the blood pressure. The age of the solution may also cooperate.

Meningitis from Micrococcus Catarrhalis.—Cot and Robert cultivated this micrococcus and an enterococcus from the spinal puncture fluid. The meningitis was mild, but the thirty-second day orchitis, of the mumps type, developed.

Immunization Against Measles.—This is a summary of the experience of Richardson and Connor published in The Journal, April 12, 1919, p. 1046.

Oct. 29, 1921, **11**, No. 44

*Endocrinology from Psychiatric Standpoint. Laignel-Lavastine.—p. 325.
Tuberculous Cysts in Wrist. H. Gougerot.—p. 333.
*Perforation of Palate from False Teeth. Rouget and Pommereau.—p. 336.
The Paratyphoid C Bacillus. C. Zoeller.—p. 337.

Bearded Women.—Lavastine remarks that hypertrichosis in women has biologic and psychiatric importance, as he shows by various types described and review of recent literature on the subject. He says that amenorrhea is the rule in bearded women, with few exceptions. In nunneries, the obligation to cut the hair every month seems to have some connection with the gradual loss of menstruation in some of the nuns. Hairs contain arsenic, iodin and phosphorus, and these abound also in the menstrual blood. When menstruation is scanty and these elements are retained in the body, the hypertrichosis might be regarded as a compensating reaction. Besides the sexual, the fetal and the nevus types of hypertrichosis, there is the syndrome characterized by hypertrichosis, adiposis with masculine aspect, and genital disturbances, amenorrhea and virilism. In Mauclaire's case, the hypertrichosis disappeared after removal of a suprarenal tumor. In five cases personally observed, the hypertrichosis accompanied various psychopathies, and he emphasizes the distinction between hypertrichosis with tendency to glycosuria and hypertrichosis with tendency to periodic psychoses. His endocrine tests on this group of five bearded women show, he says, that bearded women *gardent le vestibule de l'endocrino-psychiatrie.*

Perforation of Palate from Plate of False Teeth.—The perforation occurred at the point where the suction valve was applied to hold the set of teeth in place by vacuum suction.

Presse Médicale, Paris

Oct. 26, 1921, **29**, No. 86

*Surgical Treatment of Goiter in Switzerland. J. C. Bloch and J. Charrier.—p. 853.
Local Anesthesia for Removal of Cancer in Mouth and Pharynx. H. Aboulker.—p. 854.
*Periarterial Sympathectomy. R. Leriche and J. Haour.—p. 856.

Surgical Treatment of Goiter.—Bloch and Charrier comment on the differences in the technic they noted during a recent trip to Switzerland. The inferior thyroid artery is always ligated first, and in exophthalmic goiter the other side is left intact. As much of the thyroidectomy as possible is done on the one side. If further intervention is required, there are no cicatricial changes on the other side to impede it.

Influence of Periarterial Sympathectomy on Healing of Wounds.—Leriche and Haour expatiate on the remarkable action of periarterial sympathectomy on healing of rebellious ulceration or torpid wounds. A lesion that has been dragging along for months may heal in a week after the sympathectomy. This healing is evidently traceable to the peripheral vasodilation which follows in a few hours below the plane of the operation. The experiments on dogs related confirm that the activation of circulation in the peripheral tissues stimulates the processes of repair.

Oct. 29, 1921, **29**, No. 87

Treatment of Leprosy. F. de Mello.—p. 861.
*Draining After Abdominal Hysterectomy. M. Dartigues.—p. 861.
Local Organic Apparatus. A. C. Guillaume.—p. 864.
Analogies Between Herpes and Encephalitis. J. Rouillard.—p. 865.

Draining the Peritoneum After Abdominal Hysterectomy.—Dartigues gives eight large illustrations of the technic for abdominal panhysterectomy with a large rubber drain passing entirely through, one end emerging from the abdominal incision, the other from the vagina. Besides the numerous openings in the central portion of the drain he has the portion just above the vagina slit lengthwise to form six strips which bulge out as the ends of the drain are pushed together. The bulging out of the six strips forms an elastic collar which holds the drain from slipping down into the vagina, while free drainage proceeds, unhampered by wicks, etc. When this "umbrella drain," as he calls it, is to be removed, traction on the two ends at once stretches the slits. They stretch out and close "the umbrella," restoring the normal diameter to the tube. It can then be easily pulled out through the vagina.

Self-retaining umbrella drain tube.

Schweizerische medizinische Wochenschrift, Basel

Oct. 6, 1921, **51**, No. 40

Kidney Disease in the Pregnant. Chassot.—p. 913.
*Impending Perforation of Gastric Ulcer. H. Ryser.—p. 923.
Examination in Otolaryngology for Degree. Siebenmann.—p. 926.

Signs of Impending Perforation of a Gastric Ulcer.—Ryser comments on the enormous importance of operating before the perforation has done much harm. His experience in his own fourteen cases of perforation has shown the constancy of the clinical picture: Extremely violent pains in the stomach, sometimes accompanied with bleeding in the stomach, and not influenced by bed rest and dieting, had preceded the perforation by five, seven, eight and twelve days in four of his cases. These rebellious pains warn of impending perforation. A further warning was given in one case by localized tenderness in the epigastrium. The operation revealed that this corresponded to a small patch of peritonitis as infectious material had passed through the thin stomach wall, weakened at the point of the impending perforation. The warning pains are due, he thinks, to the ulcer eating down into the depths and thus reaching the nerves in the fundus of the ulcer, and to irritation of the peritoneum covering the wall outside. Rebellious pain must not be regarded as a warning of impending perforation unless there is a history pointing to a long established gastric ulcer, and the site and other features of it are known. In the four cases mentioned there had been from four to ten years of ulcer disturbances, and clinical examination had located the ulcer in the pylorus region. In two of the four cases, informed by telephone of the onset of the pains, he recognized the impending perforation and prepared for the operation in time to arrest the perforation or minimize the damage therefrom.

Annali d'Igiene, Rome

May, 1921, **31**, No. 5

*Arbutin in Testing Cholera Vibriones. M. Pergola.—p. 265.
The Water Supplies of Istria. M. Gioseffi.—p. 272.
*Behavior of Salts on Gelatin. A. Scala.—p. 289.
Water Instead of Alcohol for Staining Sputum. Rigobello.—p. 306.
*Preparing Colloidal Gold for Lange Reaction. N. Pietravalle.—p. 309.

Arbutin in Bacteriology.—Gosio found that tubercle and dysentery bacilli split arbutin in a characteristic way, useful in differentiation, and Pergola here announces that it can serve in the same way for the recognition of cholera vibriones. Strains that do not modify the arbutin are certainly not of the cholera-producing type, nor those that attack it very actively. The true cholera strains split arbutin, but only slowly and with scant energy.

Behavior of Salts with Gelatin.—Among Scala's conclusions from his research is that the anions and cations of the salts, acting on colloids, rinse out separately. This with other facts observed testifies that the union of the salts with the colloids is a true chemical combination, and that these combinations behave, in respect to water, according to the new properties acquired.

Preparing Colloidal Gold.—Pietravalle has simplified the technic for the colloidal gold used in the Lange test, and states that he was constantly successful with his new method in obtaining a good suspension. He added to 100 c.c. of distilled water 1 c.c. of a 1 per cent. solution of gold chlorid and 1 c.c. of 2 per cent. solution of potassium carbonate. This was heated over a flame and, as it began to boil, he added 1 c.c. of a 0.5 per cent. solution of glucose and continued the boiling. The fluid in about a minute turns violet and in a few seconds the tint becomes a brilliant purple, and it is then removed from the flame.

Archivio Italiano di Chirurgia, Bologna

October, 1921, **4**, No. 1

*Tuberculous Granuloma Obstructing Pylorus. G. Lusena.—p. 1.
*Blocking the Splanchnic Nerves. G. Rodi.—p. 32.
*Visceral Ptosis. G. Parlavecchio.—p. 43.
Solitary Lipoma on Scalp. N. Novaro.—p. 55.
*Cystic Lymphangioma. A. Kraus.—p. 63.
*Hydatid Cyst in Tibia. A. Lesi.—p. 86.

Tuberculous Granuloma Obstructing Pylorus.—Lusena reports a case in a woman of 55, treated by gastro-enterostomy. He summarizes 9 cases of the ulcerative type of a tuberculous lesion of the pylorus region, and 12 of the infiltration type, and 28 in which the tuberculous lesion was in the form of a tumor. In 17 cases the tuberculous lesion was outside of the stomach and compressed the pylorus from without. This brings to 66 the total of cases of pylorostenosis of tuberculous origin he has found on record in Europe.

Blocking the Splanchnic Nerves.—Rodi has been testing on the cadaver the various technics for blocking the splanchnic nerves and the solar plexus with Kappis' posterior injection. Rodi warns that if the lowest rib is abnormally low and abnormally slanting, Kappis' posterior technic is not applicable. Any abnormal curvature of the spine must also be taken into account.

Visceral Ptosis.—Parlavecchio discusses the diagnosis and treatment of gastro-intestinal and nervous disturbances for which visceral ptosis is responsible. The sagging organ pulls on others, on nerves, on endocrine glands, and induces disturbances of all kinds which may be ascribed to everything but the right cause. The sagging liver, for instance, may twist a little on its axis, and gallstone cholecystitis may be set up in consequence. He has scarcely ever encountered a case of gallstone cholecystitis without ptosis of the liver. Cases diagnosed and treated as neurasthenia are often merely the consequences of ptosis of a kidney or the uterus, promptly curable by fixation of the sagging organ. One young woman threatened with insanity from the effects of right nephroptosis was restored to health by a nephropexy, while another refused the operation. It was done finally in the insane asylum, but the psychosis was of too long standing then for a cure to be possible. Among the arguments he presents as to the participation of the sympathetic and endocrine systems in the disturbances from visceral ptosis is the striking analogy between the nervous and psychic disturbances with thyroid disease in persons free from visceral ptosis, and the nervous and psychic disturbances in persons with visceral ptosis but with normal thyroid. In examining for ptosis the subject must stand and breathe deep, as we palpate the viscera, especially the kidneys. The fixation of the organ by suspension imitates Nature's methods best, and the earlier it is done, the better. Besides restoring the organ to its normal place we must seek to restore the nervous and endocrine balance. For this we may have to act on the sympathetic nervous system, either by resection, by stretching the nerve, or by electrolysis or other means to block conduction. The balance in the endocrine system may have to be restored by organotherapy in addition. The main point he emphasizes, however, is to think of the possibility of visceral ptosis and take measures accordingly, instead of wasting precious time on treatments on a mistaken basis.

Cystic Lymphangioma.—Kraus reviews the literature on this subject and reports a case in a 2 year infant. The tumor was in the front and side of the right chest and weighed 1.05 kg. after extirpation. These cystic lymphangiomas are congenital, and their complete removal has given good results.

Hydatid Cyst in the Tibia.—Lesi scraped out the cavity in the upper tibia and applied a large plaster cast, and the surgical recovery was complete in a few months. In the nearly 100 cases on record of echinococcosis in bones, the pelvis, humerus, tibia, vertebrae and femur were affected most frequently, and in the order named. It is among the gravest diseases of the bones. In his case the upper tibia was reduced to a mere shell for three quarters of its circumference and the cavity did not show healthy granulation for nearly three months, and ankylosis of the knee resulted from the inflammation and long immobilization.

Pediatria, Naples

Oct. 15, 1921, **29,** No. 20

Malignant Lymphogranuloma in Boy of Five. F. Lo Presti-Seminerio. —p. 921.
*Cystic Degeneration of Spleen in Internal Leishmaniasis. M. Mallardi. —p. 934.
Banti's Disease in Children. A. F. Canelli.—p. 938. Cont'n.

Cysts in Spleen in Internal Leishmaniasis.—The cystic degeneration of the spleen was ascertained by puncture of this organ as the leishmaniasis in the child of 18 months seemed to be growing worse under treatment with antimony and potassium tartrate. Mallardi concluded that the drug had been given too vigorously, and when it was suspended for a time and then resumed in small doses, at longer intervals, complete recovery followed.

Policlinico, Rome

Oct. 24, 1921, **28,** No. 43

*Bromoderma. S. Pulvirenti.—p. 1427.
Factitious Dermatitis. G. Marengo.—p. 1432.
Vaccine Therapy and Serotherapy Against the Streptococcus and Staphylococcus. I. Corradi.—p. 1434.
Hunger Syndrome in War Prisoners in Austria. G. de Toni.—p. 1439.

Bromoderma.—The eruption had been noted for eight months, the first appearance following a burn from a hot water bottle. The patient was a woman who for years had been taking potassium bromid for severe epilepsy. The inefficacy of all local measures and the gradual subsidence when the bromid was discontinued and phenobarbital used instead, confirmed the nature of the extensive dermatitis on the leg, while the epilepsy was materially improved at the same time.

Riforma Medica, Naples

Oct. 1, 1921, **37,** No. 40

*Composition of Blood in Nephritis and Uremia. G. Poggio.—p. 937.
Primary Cancer in Appendix; Two Cases. S. G. Giardina.—p. 944.
Osteomyelitis of Fibula. M. Valentini.—p. 946.
*Testicle Tissue Promotes Healing of Wounds. E. Aievoli.—p. 947.

The Blood with Kidney Disease.—This comprehensive report covers research on the physicochemical changes manifest in the blood during acute or chronic nephritis, nephrosis from mercuric chlorid poisoning, uremia, and in heart disease with derangement of the circulation in the kidneys. Poggio estimated in each of the total twenty-six cases the carbon dioxid in the blood and alveolar air, and the hydrogen ions in the blood, applying the tests with and without the influence of drugs. The carbon dioxid in blood and alveolar air may aid in differentiating between kidney disturbances from circulatory and from essential functional changes, the findings being normal or above normal in the former.

Testicle Tissue Promotes Healing.—Aievoli recalls that in 1890 he published his success in promoting the healing of torpid and rebellious varicose ulcers and healing of burns by applying thin slices of testicle parenchyma directly to the lesion. The excellent result was constant. He remarks that at that time endocrinology was in a nebulous phase, and this work of his was almost the first solid fact obtained. He used the testicles of rabbits and guinea-pigs, cats, dogs and sheep. Others recently have called attention to the efficacy of testicle pulp in promoting the healing of wounds.

Rivista di Clinica Pediatrica, Florence

July 26, 1921, **19,** No. 5

*Dyspepsia in Artificially Fed Infants. D. Veronese.—p. 257.
Do Not Dilute Milk Too Much. F. Silvestri.—p. 268.
*Indicanuria in Children's Diseases. T. Nigro.—p. 278.
*Gonococcus Infection in Children. L. Frassi.—p. 290.

Dyspepsia in Artificially Fed Infants.—Veronese explains that when, as in his district (Padua), cow's milk is exceptionally poor in fats, and such milk is diluted according to textbook directions, the infants do not get enough nourishment. The digestive disturbances are part of the clinical picture of inadequate feeding and oversupply of water.

Indicanuria in Children.—Nigro has simplified Strauss' test for indican in the urine, as he explains, and commends this technic as convenient for children. He gives the findings in eleven cases of measles.

Gonococcus Infection in Children.—Frassi reports some cases which confirm that gonococcus infection is a general rather than a local process, and that vaccine therapy is an aid in the differential diagnosis as well as in curing the infection. In nine cases in little girls, with or without complications, the vaccine alone was used, and complete recovery is recorded for each. From four to eleven injections were made; the subsidence of the vaginal secretion is more rapid than under any other treatment. This is a special advantage as it reduces the danger of contagion of the eyes and of others. It also prevents the passage into the chronic stage which is particularly liable in the small and hymen-blocked child vagina. He has not been able to find any instance on record of complications developing after vaccine therapy. A stock vaccine was used.

Rivista Critica di Clinica Medica, Florence

Sept. 15, 1921, **22,** No. 26

*Epilepsy plus Polyclonia. N. Niccolai.—p. 301. Begun No. 25, p. 289.

Polyclonia Plus Epilepsy.—Niccolai reports from Venice the case of a previously apparently healthy girl of 16 who, after a fright from an aviator's bomb, developed epileptic seizures. In the course of two or three years this was supplemented by clonic spasms in the intervals, and mental derangement. The clinical picture was thus the typical one described by Unverricht in 1891 as he first saw it in five children in one family with an alcoholic father. Niccolai compares with his the similar cases on record. It seems probable that according as the morbid stimulus acts suddenly and violently on the predisposed area in the cortex, or slowly and insidiously, epileptic seizures or clonic spasms develop. That it is true epilepsy, however, is demonstrated by the character of the progressive mental impairment.

Anales de la Facultad de Medicina de Lima

March-April, 1921, **4,** No. 20

*Ernesto Odriozola. H. Valdizan.—p. 90. Idem. J. F. Valega.—p. 106.
*Fatty Degeneration of the Heart. E. Odriozola.—p. 108.
*Grave Carrion's Disease. E. Odriozola.—p. 121.
Allen's Method in Treatment of Diabetes. Idem.—p. 132.

Odriozola's Life Work.—This memorial number of the *Anales* lists 227 articles from the pen of the late professor of clinical medicine at Lima, and reproduces chapters from two of his larger works that were published in French.

Archivos Españoles de Pediatría, Madrid

August, 1921, **5,** No. 8

*Treatment of Tuberculous Peritonitis. M. Vásquez Lefort.—p. 449. Conc'n No. 9, p. 513.
*Pituitary Dwarf Growth. G. Marañón and J. Solanilla.—p. 467.

Tuberculous Peritonitis in Children.—Vásquez emphasizes the necessity for getting rid of the ascites, but he lays equal stress on the necessity for doing this only by the natural emunctories, not by puncture. The exudate contains antibodies, and we must not drain these away by puncture, but divert the fluid by purgatives and diuretics. In differentiating a tuberculous exudate, he relies on the Rivalta test and on the higher agglutinating power of the fluid in comparison to the blood. A high agglutinating power indicates a better prognosis. The Rivalta reaction is the opaline streak, like a spiral of tobacco smoke, that forms when a drop of the ascitic fluid is dropped into 50 c.c. of water containing one drop of a 0.5 per cent. solution of acetic acid or 8 to 10 drops of white vinegar. If mechanical disturbances compel paracentesis, injection of air may have a curative influence. In one boy, the ascites kept returning after a laparotomy, and after aspirating 21 liters and then 16 liters, he injected air and there was no return of the exudate. Injection of a medicated fluid seldom has more than transient effect; better results have been realized occasionally with injection of 4 to 6 liters of boiled water at a temperature of 40 to 45 C. (104 to 113 F.), although this is not constantly effectual. It might be well to combine paracentesis with injection of water, and conclude with injection of air.

Pituitary Origin of Dwarfism.—Marañón and Solanilla present evidence that in all cases of true dwarf lack of growth, the anomaly is the result of deficient functioning of the anterior lobe of the hypophysis cerebri. In a case described the boy of 15 measured 1.24 m. and weighed 32 kg. and radiography showed the sella turcica abnormally small and flat. The case can be classed as an instance of the pituitary adiposogenital syndrome plus pituitary dwarfism.

Revista de la Asoc. Méd. Argentina, Buenos Aires

August, 1921, **35,** No. 202

Susceptibility to Toxins of Suprarenalectomized Rats. II. J. T. Lewis.—p. 529.
*Colloidal Reactions in Spinal Fluid. S. Mazza, C. Mey and Flario Niño.—p. 532. Idem. A. Sordelli and F. Renella.—p. 535.
*Calcium in Blood of Different Species. P. Mazzocco.—p. 539.
*Calcium in Blood of the Pregnant. Id. and R. Bustos Morón.—p. 552.
*Principles for Treatment of Diabetes. H. Salomon.—p. 561.
Pathogenesis of Epilepsy. Nerio Rojas.—p. 572.
*Deep Roentgenotherapy of Tumors. R. Espinola.—p. 585.
*Spontaneous Perforation of Gallbladder. A. G. Gallo.—p. 600.
*Duodenal Diverticula. R. Novaro and A. Galindez.—p. 607.
*Functioning of Gastro-Enterostomy. A. Gutiérrez.—p. 620.
Ombrédanne's Method for Grave Hypospadia. R. A. Rivarola.—p. 634.
*Bacteriologic Tests of Drinking Water. J. M. Mesa.—p. 639.
*Committee Report on Regulation of Prostitution.—p. 646.
Suture of Cornea in Cataract Operation. F. Iribarren.—p. 699.
Molluscum Contagiosum of Eyelid. P. Satanowsky.—p. 707.
*Bilateral Cataract from Lightning Stroke. A. Tiscornia.—p. 720.

Colloidal Reactions in Cerebrospinal Fluid.—Sordelli and Renella applied to 140 different cerebrospinal fluids seven different parallel colloidal reaction tests. This experience confirms their diagnostic value, especially of the Lange technic, but a positive reaction is not conclusive as, although these tests are the most sensitive, they are not the most specific.

Calcium in the Blood of Different Species.—Mazzocco describes a simplified method for determining the calcium content of the blood, and tabulates the findings with it in man and in dogs, cats, rabbits, rats, fowls, goats, sheep and cattle. They show that the calcium content of the blood corpuscles and of the plasma is the same for the same species, and about the same in the plasma or serum of the same animal. The average for men was 7.15 mg. per hundred c.c. of whole blood; 9.34 for the plasma and 1.23 for the corpuscles. The average for the whole blood in rats was 6.77; in rabbits, 8.43; in guinea-pigs, 6.02, and in cattle, 6.43.

Calcium in the Blood of the Pregnant.—The figures corresponding to those in the preceding abstract are tabulated from fifty-six women, most of them pregnant. The range in the whole blood was from 7.80 to 9.26, the lower figures being in the pregnant or after delivery, confirming the decalcifying influence of gestation. No connection between the vomiting, albuminuria or gastralgia of pregnancy and the calcium content of the blood could be detected.

Treatment of Diabetes.—Salomon says that he does "not agree with the Americans. . . . The starvation treatment is excellent for the diabetes, but not for the diabetic. We should not cut down calories below the amount compatible with good nourishment and strength. As a rule, about 35 calories per kilogram is the proper average." He thinks that the fear of the dangers from acetone is exaggerated. When the urine is free from sugar, he asserts, there is no danger from even considerable amounts of acetone, aside from very exceptional cases. In this case all the sugar that is derived from the albumin molecule, on a fat and albumin diet, must be utilized or otherwise glucose would be eliminated. The danger begins when both sugar and acetone are being eliminated in large amounts. But even under these conditions he has often kept such patients for years on a strict fat and albumin diet when tests of different foods proved that this diet gave the best results in respect to the elimination of glucose and the general condition. He does not follow this plan except with diabetics who have good stomachs, and he proceeds very slowly to this diet, keeping the balance with bicarbonate, and supervising the acidosis, ready to interpose courses of carbohydrates from time to time as seems necessary.

Deep Roentgen-Ray Treatment of Tumors.—A similar article by Espinola was published in these columns, Nov. 5, 1921, p. 1531.

Spontaneous Perforation of the Gallbladder.—Gallo has had two operative cases of this kind and two of bile peritonitis, the bile oozing through the intact walls of the gallbladder. The success of treatment of perforation depends on the degree of intoxication, and this is dependent on whether the bile is septic or not, and on the delay before the operation. In a case described, a large calculus in the gallbladder, with projecting points, lay opposite the perforation near the neck.

Duodenal Diverticulum.—In the two cases described, the gastric or duodenal ulcer and sagging of the stomach and pylorus had exaggerated the intraduodenal pressure, and a concomitant inflammatory process and general weakening of the wall of the duodenum had cooperated in the production of the diverticulum. It was not congenital.

Gastro-Enterostomy Functioning.—Gutiérrez says that the clinician, the surgeon and the radiologist must combine to study the cause for the closure of the gastro-enterostomy opening in certain cases. This will often show that the chyme

passes out through both the pylorus and the new opening, or predominantly through the pylorus. To prevent this he ligates the pylorus with catgut. This closes it only temporarily, but long enough for the new opening to become accustomed to its task, as the entire contents of the stomach have to pass through it from the first. If the closure of the pylorus is to be permanent, he advocates pylorogastrectomy from the start. The temporary ligation of the pylorus arrests the dynamic physiologic propulsion of the chyme, and it then obeys the laws of gravity and passes out through the new opening.

Bacteriologic Examination of Water.—Mesa extols the advantages of Besson's method for testing drinking water as simple and dependable. He uses a 40 per thousand solution of peptone to which lactose and neutral red are added. The gas formation is estimated by means of an inverted hemolysis tube in the test tube containing the culture medium. The presence of colon bacilli is indicated by the change in tint, the fluorescence, and the production of gas in twenty-four hours.

Regulation of Prostitution.—This is a long committee report on measures to arrest the spread of venereal disease.

Bilateral Cataract from Lightning Stroke.—Tiscornia's patient was a girl of 13 who had been rendered unconscious by lightning coming down the chimney, but there had been no burns or other disturbance except congestion in the eyes and eyelids and photophobia for about two months. A year later cataract began to develop, and he removed it from both eyes by the end of the fourth year. He compares with this case twenty-nine he has found on record in thirty-four publications on electric cataract in thirty-six years, but lightning was responsible in only ten of them.

Revista Médica del Uruguay, Montevideo

September, 1921, **24**, No. 9

*Posttyphoid Aphasia. J. Bonaba.—p. 400.
*Ecthyma Simulating Syphilid. J. May.—p. 409.
*Angioneurotic Edema. C. Nario.—p. 413.
*Fibromas and Pregnancy. E. Pouey.—p. 417.
Double Empyema in Child. F. Rodríguez Gómez.—p. 424.
Chronic Deforming Rheumatism. J. Servetti Larraya.—p. 429.

Posttyphoid Aphasia.—In the first of the two cases reported by Bonaba the inability to speak may have been from mutism, but in the other child the aphasia was unmistakable. This child also responded to the Wassermann test. The first child, a boy of 7, regained speech the forty-fifth day of the typhoid; the other not until three and a half months. Landouzy encountered sixteen cases and Dieuzaidi has compiled thirty-seven.

Case of Ecthyma.—The features of May's case of a streptococcus dermatitis deceptively resembled an ulcerative syphilid except for the negative Wassermann reaction. After dragging along for several months under various measures, a prompt cure followed the use of an autogenous vaccine.

Multiple Angioneurotic Edema.—Nario's patient has been having these attacks for nearly fifteen years. Pain is the main symptom. It begins in the precordial region and slowly spreads to the right, and persists almost unbearable for twelve or eighteen hours. It is followed by extreme depression, requiring caffein, camphor or other stimulants. The woman can tell a few hours beforehand the onset of an attack. They occur less often and are milder in warm weather. Fleeting edema at various points testified to the angioneurotic nature of the process, the pain being evidently the result of edema in the internal organs, causing the erratic visceralgias in the intensely vagotonic state. No benefit was derived from organotherapy, and he warned the family of the possibility of edema of the brain and of the glottis. Later, an attack of sudden symptoms resembling those of grave uremia yielded promptly to venesection and lumbar puncture, realizing his prognosis.

Fibromas and Pregnancy.—Pouey is convinced that sterility is sometimes due to the influence of a myoma in the uterus. In two of the six cases he reports myomectomy was followed by conception. In one case the large fibroma had not prevented ten normal pregnancies, the fibroma growing smaller with advancing years.

Semana Médica, Buenos Aires

Sept. 15, 1921, **28**, No. 37

*Ovarian Dermoid Cysts. A. Chueco.—p. 339.
*Effect of Suprarenal Insufficiency. F. L. Soler.—p. 361.
*Fluorids Check Growth. L. Goldemberg.—p. 363.

Dermoid Ovarian Cysts.—Chueco's experience with 5 cases has convinced him of the superior advantages of the vaginal route for removal of a dermoid cyst in an ovary. An exact diagnosis is indispensable not only of the cyst but of the condition of the surrounding organs, as adhesions binding down the uterus, etc., would impede if not prevent a successful operation. His 5 cases are described in full with eight illustrations. In one case the woman was at term with her second child, and the large tumor prevented delivery. On the assumption of a hydatid cyst, the tumor was punctured through the posterior vagina, releasing a large amount of thick sebaceous fluid, after which delivery proceeded normally. Three months and a half later the uterus was separated from the bladder through an anterior colpotomy. The right ovary was found enlarged and cystic, but free from dermoid features, and after ignipuncture it was returned to the abdominal cavity. The other ovary was then clamped and removed, and recovery was smooth except for a hematoma. The pedicle had evidently not been ligated tight enough, but this was easily drained. In all the 5 cases the tumor was as large as the head of a fetus at term. In one case the uterus was in retroversion, friable and adherent, and panhysterectomy was found necessary. The outcome was perfect in all the cases. A number of technical points are emphasized, especially the necessity for the tumor being "reducible and exteriorizable." This is usually the rule with these pedunculated dermoid cysts. Circumstances in the individual case determine whether access shall be through the anterior or posterior vagina or both. Local or spinal anesthesia suffices unless the vagina is exceptionally narrow. He does not think it necessary to ligate the vessels in the vaginal wall as there is no hyperemia of inflammation, but he regards Sommer's hysterolabe as indispensable for the operation.

Total Suprarenal Insufficiency.—Soler's research on dogs shows that the toxic effects of removal of both suprarenals seem to be of a sleep-inducing nature. The dogs survived for about thirteen hours and the brain cortex seemed to feel the effect most. Instead of the autocurarization which others have reported, he found an automorphinization.

Checking of Growth by Sodium Fluorid.—Goldemberg relates that the research recently described by T. Sollmann and his co-workers confirms in every respect the results of his own research, published a year and a half ago, demonstrating the checking of the growth of rabbits and young rats by small repeated doses of sodium fluorid. In 1917 he had called attention to the influence of the fluorids in checking or inhibiting oxidations and nutrition in general. This may have some bearing on endemic goiter, he suggests in conclusion.

Siglo Médico, Madrid

Aug. 6, 1921, **68**, No. 3530

*Integral Autoserotherapy. E. Escomel.—p. 741.
Influenza in 1918. R. Nevado.—p. 749.

Integral Autoserotherapy.—Escomel's endorsement of injection of the patient's own blood serum was reviewed, May 14, 1921, p. 1375, when published elsewhere.

Aug. 13, 1921, **68**, No. 3531

The Last Epidemic of Influenza. Alvarez Sierra.—p. 765.
*Simple Means for Production of Vacuum. F. Muñoz Urra.—p. 766.
Ethical Insanity. Fernández-Victorio y Cociña.—p. 768. Conc'n. p. 798.

Device to Induce Vacuum.—Muñoz Urra heats a small metal cylinder containing 10 gm. of water, with an outlet tube. When the water is boiling well, the cylinder is dropped into cold water. The condensation of the steam as it cools in the cylinder produces a vacuum, and this vacuum can be utilized for extraction of cataract by the Barraquer method, or for any similar purpose.

Archiv für Verdauungs-Krankheiten, Berlin

September, 1921, **28**, No. 3-4

*Chronic Pancreatitis. L. R. Grote and H. Strauss.—p. 123.
*Duodenal Ulcer. G. Singer.—p. 131.
New Intestinal Tube. M. Einhorn (New York).—p. 147.
*Mastication and Gastric Secretion. L. v. Friedrich.—p. 153.
*Intestinal Fermentation Dyspepsia. T. Stenström.—p. 208.
*Stricture and Pernicious Anemia. E. Meulengracht.—p. 216.
Roentgenologic Diagnosis of Gastric Polyp. F. Gassmann.—p. 226.
Determination of Acidity of Stomach Content. Christiansen.—p. 231.

Chronic Pancreatitis.—Intestinal dyspepsia of several years' standing may have been responsible for the chronic pancreatitis in the woman of 43. Or it might be traced to tonsillitis, as in a few cases of pancreas diabetes published by Hirschfeld. The stools showed a total lack of lipase, while starch digestion proceeded normally and the woman did not lose in weight, although she was nourished only by the carbohydrates in her mixed diet. Alimentary glycosuria did not occur till late, but phlorizin glycosuria was three or four times above normal. This symptom could be inhibited with thymus extract, as also in some other cases observed by Grote and Strauss.

False Duodenal Ulcer.—Singer has been impressed with the large proportion of cases presenting the clinical picture of duodenal ulcer when in reality stomach and duodenum are sound, and the disturbances are the result of inflammation or atrophy of the nerves innervating the region, or the result of toxic action from a tuberculous process somewhere in the body, or lead poisoning or other source of toxin production. He gives the details of some typical cases in each of these categories. In one he diagnosed during life the vagus neurosis and pylorospasm causing the typical clinical picture of duodenal ulcer, and necropsy revealed neuritic atrophy of both vagi, the stomach and duodenum intact. In this and in 3 similar cases there was pulmonary tuberculosis. The duodenal or gastric symptoms predominate although they are only secondary to the irritation of the vagi from the tuberculosis. This may be merely from direct pressure on the vagus by a tuberculous gland. Notwithstanding the clinical and radiologic symptoms of ulcer, all the disturbances are explainable by spasmophilia, induced by irritation of the vagus system from latent or masked pulmonary tuberculosis, deranged circulation from heart disease, etc. An operation reveals little if anything abnormal in stomach or duodenum while even a minor operation may speed up an underlying tuberculous disease. In 5 cases there were multiple ulcers in the digestive tract with cancer or tuberculosis of lung or meninges; in others, sepsis or burns were the primary factor. Anatomic changes are usually found in the vagus in these cases; they are not mere functional neuroses. This has dampened his enthusiasm for operative treatment of duodenal ulcer. As mentioned above, in 4 of his 50 operative cases, the duodenum and stomach were found intact. In the 30 duodenal ulcer cases, free from complications, only 42.1 per cent. were permanently cured by the palliative operation; over 26 per cent. died and there was recurrence in 18.4 per cent. and peptic ulcers in 13.2 per cent. On the other hand, of the 11 patients treated by resection, one died, but the others were all permanently cured. With bleeding from an arrosion, radical surgical measures are the only ones to be considered, but under other conditions the indications vary from case to case. This communication opened the discussion on duodenal ulcer at the recent German conference of specialists on diseases of digestion and metabolism.

Influence of Mastication on Gastric Secretion.—This article won for Friedrich the Boas prize this year. It fills fifty-two pages, twenty of them being devoted to tabulated details of the tests and the findings in the stomach content after regulated mastication of different substances. They show that mastication induces secretion in the stomach by reflex action in from five to seven minutes, if all is normal. The duration of the mastication does not seem to affect this, so that exaggerated mastication is of no benefit to the organism. With subacidity, it is possible to obtain gastric juice approximating normal in composition and amount, when the food is thoroughly masticated. The conclusion is evident that with hypacidity it is better to order food that will call for considerable mastication, instead of food such as is usually ordered to spare the stomach. With hyperacidity and hypersecretion, on the other hand, the reverse should be the rule, ordering food that requires no mastication, as the reflex secretion with a tendency to hyperacidity is much more pronounced than in the healthy and with subacidity. He found incidentally that the articles of food that displayed the greatest action in inducing secretion of hydrochloric acid were in their order, meat, bread, eggs and condiments. Those that promoted gastric secretion as a whole, were bread and butter, meat and bread. Chewing a mouthful and then expelling it often increases gastric secretion. This was most pronounced when sugar was chewed for this sham feeding test. This *kombinationskauscheinmahlzeit*, as he calls it, will be found useful to obtain pure gastric juice, to distinguish between hyperacidity and hypersecretion, and to test whether the stomach is capable of secreting active gastric juice.

Fermentation Dyspepsia.—The severe intestinal fermentation and diarrhea developed in the young man after a gastroenterostomy.

Intestinal Stricture and Pernicious Anemia.—Meulengracht adds another to the five cases on record in which pernicious anemia accompanied a benign stricture of the bowel. These cases support the theory of the intestinal origin of cryptogenetic pernicious anemia.

Deutsche medizinische Wochenschrift, Berlin

Sept. 22, 1921, **47**, No. 38

Facial Paralysis as Sequel of Epidemic Encephalitis. Müller.—p. 1119.
Histopathology of Syphilitic Adenitis. E. Zurhelle.—p. 1122.
Renal Glycosuria as Early Sign of Pregnancy. L. Nürnberger.—p. 1124.
Clinical Classification of Pulmonary Tuberculosis According to the Fundamental Anatomic Processes. H. Ulrici.—p. 1126.
Roentgen Control of Healing Lung Tuberculosis. Liebermeister.—p. 1128.
Effect of Eating Between Meals on Gastric Motility. Czepa.—p. 1129.
Case of Gangrene of Intestine and Penis from Angiospastic Neurosis. Wieting.—p. 1129.
Subtotal Resection of the Scapula. K. Philippsberg.—p. 1130.
Plastic Surgery of the Urethra. H. Riese.—p. 1131.
Plastic Operation on Eye Socket. G. v. Takáts.—p. 1132.
Present Methods of Testing Gastric Function. L. R. Grote.—p. 1133.
Obstetric Hints for Practitioner. Rissmann.—p. 1135.

Sept. 29, 1921, **47**, No. 39

The Therapeutic Problem in Malignant Tumors. Blumenthal.—p. 1151.
Biologic Questions in Connection with Irradiation of Malignant Tumors. L. Halberstaedter.—p. 1154.
The Distribution of Roentgen-Ray Energy Throughout the Human Body. F. Dessauer.—p. 1155.
Constitutional Biologic Abnormalities in Tuberculosis. Borchardt.—p. 1159.
Clinical Classification of Pulmonary Tuberculosis. A. Mayer.—p. 1160.
Hypophysis Extract as Heart Tonic. A. Pohl.—p. 1162.
Clinical Aspects of Tumors of Pancreas. K. Kleinschmidt.—p. 1162.
*Narcolepsy During Pregnancy. H. Nevermann.—p. 1164.
Treatment of Purulent Effusion in Pneumothorax. Fraenkel.—p. 1165.
Present State of Knowledge of High Blood Pressure. Rosin.—p. 1165.
Surgical Hints for Practitioners. I. G. Ledderhose.—p. 1167.

Narcolepsy During Pregnancy.—Nevermann reports a case of narcolepsy in a pregnant patient. That narcolepsy is a distinct disease, he says, is now generally recognized. The etiology is still a matter of controversy. Guleke regards narcolepsy as resting on a neurasthenic basis; Klieneberger and Stöcker think a psychopathic constitution is responsible. Others contend that it is due to a neurosis with a degenerative basis, or disturbance of endocrine function; more particularly of the hypophysis, or a vasomotor disturbance, possibly relaxation of the sympathicus. In Nevermann's case, the narcoleptic symptoms had their onset during the seventh month of pregnancy. For three days and nights the patient could scarcely sleep; after that she would fall asleep at all times during the day, whether she was working in the kitchen, employed at other housework, sewing, sitting in the street car or when reading. Often she suddenly fell asleep during a conversation; in a short time she would awake, usually with a start, and continue the conversation where she left off. Sometimes she would fall asleep when walking. All attempts to combat her sleepiness with stimulants, sedatives and organ extracts proved futile. The patient was well nourished and had no organic disease. As she approached term, the attacks became less frequent and of shorter duration. At the end of the eighth month they had about ceased, and by the close of the ninth month they had stopped altogether. In observations made in this case, Nevermann finds support for the view that narcolepsy, or at least narcolepsy

associated with pregnancy, has no basis in a psychopathic constitution or in a neurasthenic diathesis and probably not in a neurosis, but is rather caused by a disturbance in the functioning of the endocrine glands, there being no evidence to indicate which glands might be affected.

Deutsche Zeitschrift für Chirurgie, Leipzig

September, 1921, **166**, No. 5-6

*Distal Bifurcation of Femur. M. Budde.—p. 285.
*Bone Pegs in Stumps. J. Fränkel.—p. 301.
*Resection of Semilunar Bone. Sonntag.—p. 319.
Pyelolithotomy Versus Nephrolithotomy. K. Scheyer.—p. 334.
*Treatment of Vertebral Tuberculosis. Vorschütz.—p. 359.
*Tuberculous Stricture of Intestine. A. Schüppel.—p. 375.
Apparatus for Applying Extension to Hand Bones. Seemann.—p. 402.
*Treatment of Actinomycosis. A. Prikul.—p. 414.

Bifurcation of Lower End of Femur.—Budde reports this rare anomaly in a family in which the father and three children had this malformation of the knee. It throws light on the development of the tibia, as he explains, the femur being normal except for the bifurcation. He has found eighty-one cases of this bifurcation on record.

Pegs in Amputation Stumps.—Fränkel has succeeded in artificially providing projecting knobs and pegs in amputation stumps which furnish support for prostheses and transmit power to them. In his first case he cut two rods from the radius, after amputating the lower half of the forearm. These rods he inserted perpendicularly in the stump, the ends projecting on each side to just below the skin. This principle has been applied successfully to stumps of all kinds, and the roentgenograms show the success and advantages of the method. One man has three of these rods traversing the bone above and below the elbow, and the implanted rods show no signs of disintegration. He ascribes their persisting vitality to the constant functional use made of them by the traction from the artificial limb. The longest interval since has been seventeen months. The artificial exostosis in some was made to slant upward to allow a firmer hold.

Dislocation of Semilunar Bone.—The isolated volar dislocation of the semilunar bone was cured by its removal. The clinical picture is vague and puzzling, but roentgenoscopy clears it up.

Treatment of Vertebral Tuberculosis.—Vorschütz urgently advocates the Albee technic for tuberculosis of the spine, and especially in its early phase. He has applied it in twenty-eight cases, and insists that the better immobilization which is realized by the implant aids materially in hastening the healing process.

Stenosis of the Tuberculous Intestine.—The stricture may be organic or spastic from the irritation from the lesion. Schüppel describes a number of cases of each type. In one case of spastic ileus from a tuberculous process in the small intestine, a laparotomy two years later confirmed the complete cure. In another case, the reflex spastic phenomena were in the stomach, and the diagnosis was misled. Also with stenosis from tuberculosis of the jejunum—the eighth case on record—roentgenoscopy proved misleading.

Roentgen-Ray Treatment of Actinomycosis.—Prikul did not give potassium iodid in the case described but trusted exclusively to roentgenotherapy, and the results were almost perfect. The large lesion covered one side of the face, from the orbit down on the neck, and the fistulas were curetted and a few incisions made to provide better drainage. Otherwise the treatment was pure roentgenotherapy. This induces leukocytosis and leukocytolysis, and to this he attributes the cure.

Medizinische Klinik, Berlin

Sept. 18, 1921, **17**, No. 38

*Meteorism as Aid in Diagnosis. C. Bayer.—p. 1133.
*Mechanical Artificial Respiration. Bruns and H. Schmidt.—p. 1136.
*Gastro-Intestinal Symptoms with Diabetes Insipidus. H. Gorke and E. Deloch.—p. 1140.
*Clearing the Air Passages in Asphyxia Neonatorum. F. Klee.—p. 1142.
*Exophthalmic Goiter and Fibrinous Bronchitis. H. Weber.—p. 1143.
*Influence of Calcium on Tetany. K. Ochsenius.—p. 1144.
Injury by Too Small Doses of Roentgen Rays. F. Pordes.—p. 1146.
Swine Erysipelas in Man. F. Walleczek.—p. 1146.
*Suspension Stability of Erythrocytes in Pulmonary Tuberculosis. A. Frisch and W. Starlinger.—p. 1147. Conc'n No. 39, p. 1177.
Ear Disease from Practitioner's Standpoint. Grahe.—p. 1149. Cont'n.

Meteorism in Diagnosis.—Bayer discusses the interpretation of the bulging of the abdomen at different points as evidence of local processes within.

Action on Circulation and Lung of Apparatus for Artificial Respiration.—The measures for artificial respiration have always aimed to supply the utmost possible ventilation of the lungs, but Bruns and Schmidt declare that the promoting of the circulation is equally important. At all events, nothing should be done to hamper the already depressed circulation, whatever method of resuscitation is applied. With the Brat pulmotor, the conditions are exactly the reverse of the physiologic; the venous blood is driven into and held at the periphery. The aspiration that follows is not able to correct this upset in the circulation. The aim should be to imitate physiologic conditions, as in the Silvester method of respiration. An apparatus devised by a Swedish physician automatically carries out the Silvester movements of the arms and chest. Their charts showing circulation, etc., while this apparatus was being applied, confirm its approximately physiologic working. It promotes instead of working counter to the natural circulation, like the pulmotor.

Gastro-Intestinal Disturbances with Diabetes Insipidus.—Gorke and Deloch theorize to explain the gastric hyperacidity and spastic constipation found in three cases of diabetes insipidus. Marked improvement followed pituitary treatment.

Removal of Aspirated Masses from Air Passages of the New-Born.—Klee advises to use a catheter made with a glass ball to collect the masses as they are sucked out of the child's trachea. The left forefinger is introduced first, the tip of the finger closing the entrance to the esophagus. The catheter is held like a pen in the right hand. Thus no time is wasted, as too often happens.

Fibrinous Bronchitis with Exophthalmic Goiter.—The fibrinous bronchitis developed in the woman of 40 at the same time as the exophthalmic goiter, after an attack of influenza. As the exophthalmic goiter gradually improved, the bronchitis subsided with it. Weber sees more than a casual coincidence in this, citing Curschmann's two cases in which asthma accompanied exophthalmic goiter in the same way; he was inclined to regard the asthma as the primary manifestation. Weber's case is thus a new instance of an endocrine neurogenous bronchial affection in vagotonia. Curschmann's success in treating his two cases on an endocrine basis suggests possible benefit from treatment along these lines in cases of fibrinous bronchitis. At least we should seek for evidences of endocrine upset, and guide treatment accordingly.

Influence of Calcium on Electric Overexcitability in Tetany.—A breast fed infant had a convulsion and the electric responses indicated tetany. Under cod liver oil and phosphorus there were no further convulsions but the electric responses became exaggerated. Then calcium was given in addition, and the electric responses promptly veered to normal.

Suspension Stability of the Erythrocytes in Pulmonary Tuberculosis.—This communication from Ortner's service at Vienna ascribes prognostic importance to the speed with which the red corpuscles settle, as this is determined by the fibrinogen content of the blood at the moment. This fibrinogen content is determined by the number of cells undergoing disintegration. The suspension stability therefore is a more delicate index of the activity of a tuberculous process than even the temperature.

Monatsschrift f. Geb. u. Gynäkologie, Berlin

August, 1921, **55**, No. 2-3

Anatomy and Physiology of the Placenta. F. d'Erchia.—p. 65.
*Experiences with Eclampsia. E. Essen-Möller (Lund).—p. 84.
*Treatment of Septic Abortion. W. Offermann.—p. 99.
Peritonitic Bands Preventing Delivery. E. Schroeder.—p. 103.
Case of Missed Labor. Idem.—p. 103.
Rupture of Symphysis During Delivery. Idem.—p. 103.
Experiences with the Kjelland Forceps. K. Riediger.—p. 113.
Ectopic Decidua. F. Unterberger.—p. 116.
Treatment of Rectal plus Genital Prolapse. Halban.—p. 122.
Hypertrophy of Portio Vaginalis in New-Born Infant. Herfarth.—p. 125.

Puerperal Erysipelas of Mamma; Two Cases. J. Ratung.—p. 129.
Recent Literature on Eclampsia with Chronic Nephritis. M. Schmidtmann.—p. 132.
Medical Impressions of Brazil and Argentina. A. Dührssen.—p. 153.

Eclampsia.—Essen-Möller analyzes his 75 cases of what he calls eclampsism, and 105 cases of actual eclampsia. This analysis has convinced him that cesarean section is not so advisable in these cases as he used to believe. The anesthesia, danger of aspiration pneumonia, to say nothing of the operation itself, outweigh the chances of benefit from it, although he is still convinced that evacuation of the uterus is the important measure. It may be possible to accomplish this by other means. By emptying the uterus we may be able to ward off impending convulsions. In his operative cases the mortality was from 13.6 to 17.6 per cent. in the different years. In the 12 fatal operative cases, the condition in 6 rendered recovery impossible; in 3 the operation was postponed too long, and in the 3 others he regards the operation as responsible for the fatality, for the reasons previously specified. All the women recovered in the 75 eclampsism cases; in 11 the child was delivered spontaneously.

Septic Abortion.—Offermann states that it is now the rule in Winter's service to give quinin, pituitary extract or other oxytocic to promote evacuation of the uterus in cases of febrile abortion, and then wait. Not until five days after the fever has declined, and the streptococci have disappeared from the vaginal secretions, is any attempt made to clear out the uterus. This plan is deviated from only when sudden menacing hemorrhage compels more active measures. In the cases thus treated there were no complications and no mortality. The total material includes seventy-four cases, and he groups them by the more or less active measures applied.

Münchener medizinische Wochenschrift, Munich

Sept. 2, 1921, **68**, No. 35

Psychophysical Constitutional Types. W. Jaensch.—p. 1101.
External Migration of Ovum in Man and Animals. H. Baur.—p. 1103.
Observations on the Notch Following the Auricular Peak in the Electrocardiogram of Isolated Mammalian Heart. E. Boden.—p. 1104.
The So-Called Vestibular Stroke. G. Trautmann.—p. 1106.
Pathogenesis of Carcinoma and the Carcinoma Dose. L. Seitz.—p. 1107.
Roentgen Therapy of Scleroderma. G. Hammer.—p. 1109.
Bactericidal Effect of Leukocytes on Streptococcus Erysipelatis. L. Bogendörfer.—p. 1110.
Prognosis of Striatum Symptoms in Encephalitis. Genzel.—p. 1111.
Nocturnal Cramps in the Leg, and Their Prevention. Marwedel.—p. 1112.
Treatment of Bilateral Pleural Empyema. W. Jehn.—p. 1114.
Ligation of Ileocolic Vein in Appendicitis. Braeunig.—p. 1115.
*Anhidrosis Following Toxic Dermatitis. W. Patzschke and R. Plaut.—p. 1117.
Filaria Loa in Eyelid for Nine Years. M. Baumann.—p. 1118.
Normal Breast Milk Stool. O. Heller.—p. 1118.
Secondary Vaccinal Lesion on Tonsil. W. Hedrich.—p. 1119.
Is Friedmann's Tuberculosis Treatment Specific? Leschmann.—p. 1119.

Suppression of Sweating After Toxic Dermatitis.—The toxic dermatitis developed after working on and wearing furs that had been treated with naphthalin. The functioning of the sweat glands was completely abolished thereafter, the young woman developing high fever at work, at the theater, and in dancing, and once she attempted suicide in her despair. This generalized anhidrosis was stationary for a year, and then daily treatment to stimulate the sweat glands was begun. After subcutaneous injection of 0.006, 0.003 or 0.001 gm. of pilocarpin, she was given an arc light bath for forty minutes. Under this combined treatment improvement was rapidly realized and has persisted to date. These minute doses of pilocarpin had no effect on the normal.

Wiener klinische Wochenschrift, Vienna

Sept. 15, 1921, **34**, No. 37

Bacteriophagic Action on Dysentery and Colon Bacilli. O. Bail.—p. 447.
Surgical Treatment of Pulmonary Tuberculosis. A. Frisch.—p. 449.
*Roentgen Irradiation Following Gastro-Enterostomy. R. Lenk.—p. 451.
Nomenclature of Obstetric Version. P. Klaar.—p. 452.

Roentgen Irradiation for Functional Disturbances Following Gastro-Enterostomy.—Lenk states that of nineteen cases of poor functioning and pain following anastomosis, in thirteen cases the symptoms were relieved by roentgen irradiation. Spasm at the site of the anastomosis possibly interferes with the functioning of the artificial opening. This spasm can be relieved by roentgen irradiation. He also suggests that postoperative irradiation may be found to be a good prophylactic measure to prevent the formation of a peptic jejunal ulcer.

Zeitschrift für klinische Medizin, Berlin

1921, **91**, No. 3-6

*Metabolism and Blood Picture Under Artificial Heliotherapy. H. Koenigsfeld.—p. 159.
*Tests of the Vagus in Vagotonia. E. Mosler and G. Werlich.—p. 190.
*Symptomatic Hemorrhagic Diathesis. F. Henke.—p. 198.
*Significance of Changes in Arneth Count. H. W. Wollenberg.—p. 236.
*Blood Platelets from Erythrocyte Standpoint. B. Schilsky.—p. 256.
*Asthma and Pulmonary Tuberculosis. W. Lueg.—p. 287.
*Spontaneous Rhythm of the Arteries. H. Full.—p. 290.
Etiology of Bacillary Dysentery. H. Braun.—p. 304.
Nonspecific Immunotherapy of Staphylomycoses. Müller.—p. 315.

Metabolism and Blood Picture Under Artificial Heliotherapy.—Koenigsfeld reports experiments on himself and others during courses of exposures of the entire body to the light from two large quartz lamps. The exposure was from four to sixty minutes long as the subject lay on a sofa, first supine and then prone. The intervals were from two to five days and the tabulated metabolic findings show that the total metabolism, especially that of protein, was stimulated by the influence of the rays. This explains the preliminary loss of weight, followed by an increase. The effect is thus like that of muscular exercise. The normal blood picture does not seem to be modified, but abnormal conditions tend to be corrected. In one case of pernicious anemia after Weil's disease, recovery followed a course of quartz light treatment. When the aim is to restore lost weight, he advises daily exposures; probably ten or fifteen minutes at a time is enough. Even this seems to be enough to arouse the appetite.

Tests for Vagotonia.—Mosler and Werlich warn that the oculocardiac reflex and similar physical tests of the excitability of the vegetative system must not be relied on too implicitly. They give the results of application of four of these tests, including the Czermak pressure test, respiratory arrhythmia, and Erben's test, to 50 patients with neurasthenia, exophthalmic goiter, peptic ulcer, spastic colitis, asthma or other manifestations of vagotonia. Positive responses were obtained in the majority, but by no means in all. Only in one case were all the tests positive; in some they were contradictory, and 14 responded negatively to all four tests, and 13 to all but one test.

Symptomatic Hemorrhagic Diathesis.—Henke refers to spontaneous hemorrhages occurring in the course of malaria, scurvy or intolerance to quinin. In five malaria cases the hemorrhages proved fatal, but two others terminated in recovery. The blood in all these cases was thin and watery and the bleeding time was abnormally long. He demonstrated that the blood platelets had been destroyed by the toxic influences from the malaria parasites, and he is inclined to regard this loss of the platelets as the main factor in the hemorrhagic diathesis in such cases, and in leishmaniasis, variola, and other diseases or conditions accompanied by spontaneous hemorrhages.

Clinical Significance of Changes in Arneth Count.—Wollenberg has been comparing the shifting in the Arneth classification from day to day with the course of the disease in a number of various conditions. The differential leukocyte count and the Giemsa stain reveal the changes and the experiences related confirm the importance of this as an element for the prognosis. It is most instructive when a continuous curve is charted. This reveals how the bone marrow is fulfilling its task.

The Blood Platelets from Erythrocyte Standpoint.—Schilsky's research in His' service at the Charité has converted him to Schilling's view that the blood platelet is the modified nucleus of the erythrocyte. He explains how all the facts observed harmonize with this conception. In the dark-field microscope, the platelets can be seen emerging from the erythrocytes. Schilling's premise that the normoblast nucleus develops into a platelet nucleus has not been demonstrated as yet, but it has been amply demonstrated that the platelets cling to or are found inside the erythrocytes. Accepting this theory of the platelet nature, the ratio of platelets to erythrocytes is an index of erythrocyte production. In the anaphylactic process, the erythrocytes in the blood stream are

damaged, and the platelets are cast out and destroyed apart from them. This occurs in anaphylactoid purpura, acute infectious diseases, and after injection of tuberculin. In these conditions the ratio between platelets and erythrocytes throws no light on the production of erythrocytes that is taking place.

Relations Between Asthma and Pulmonary Tuberculosis.—Lueg reports three cases in which asthma developing late in life seemed to rouse to an active course previously latent tuberculous disease of the lung.

Spontaneous Rhythm of the Arteries.—Full's ingenious method for estimating the contractions of the arteries has apparently established that there is in the body an automatic mechanism which induces slow rise in the blood pressure and then a slow fall. This spontaneous rise in blood pressure is accompanied with a constant rhythmic interchange of fluid between the blood vessels and the lymph spaces.

Zentralblatt für Chirurgie, Leipzig

Sept. 3, 1921, **48**, No. 35

Technic of Local Anesthesia in Operations on the Neck. D. Kulenkampff.—p. 1262.
Conduction Anesthesia in Abdominal Operations. L. Drüner.—p. 1265.
Diagnostic Value for Surgery of Velocity of Precipitation of Blood Corpuscles. W. Löhr.—p. 1267.
Infection from Chronic Cases of Dysentery. E. Mathias and H. Hauke.—p. 1270.
Bone Implant in Tuberculosis of Hip and Spine. Schmidt.—p. 1271.
"Sacral Anesthesia in Difficult Cystoscopy." Goldenberg.—p. 1273.

Sept. 10, 1921, **48**, No. 36

*Prevention of Recurrence in Cancer of Breast. H. Schloffer.—p. 1310.
*Genesis of Arm Paralysis in New-Born. S. Weil.—p. 1312.
*Heredity in Congenital Luxation of Hip Joint. Roch.—p. 1314.
Pathologic Changes in Peripheral Nerves. Teuscher.—p. 1316.
p. 1316.
"Surgical Treatment of Furunculosis of Axilla." Bockenheimer.—p. 1317.

Prevention of Local Recurrence in Cancer of the Breast.—Schloffer emphasizes that every surgeon who operates on cancer of the breast should face the reality that in the case of plainly operable cancer of the breast he must bear the blame for most recurrences, since they are usually due to inadequate excision of tissue. He holds that for many surgeons the possibility of securing a prima intentio, by completely closing the wound, constitutes a temptation unduly to restrict the amount of tissue excised. In his opinion, the illustrations of operations show, for the most part, skin incisions that would not suffice for even the incipient stages of cancer. He thinks that the old requirement that an excision shall be of such an extent that a complete closing of the wound by suture shall no longer be possible is fully justified; for it seems to him entirely unlikely that cases in which a modest incision and tight suturing of the wound would be allowable will be discovered in time for such operation. In the case of small tumors that do not adhere to the skin a gap from 3 to 4 cm. wide should be left at the site of tumor; in more advanced cases, a hand's breadth, or, in certain instances, a much greater skin defect.

Investigations on the Genesis of Arm Paralysis in the New-Born.—Weil discusses the results of his experiments, which, he thinks, support the contention that some of the plexus injuries of the arm that appear to be birth accidents may be, in reality, of intra-uterine origin, having been produced by unusual, cramped positions of the arm.

Rôle of Heredity in the Etiology of Congenital Luxation of Hip Joint.—Roch found that out of 67,429 patients who had been admitted to the two hospitals whose records he examined there were, during a ten year period, 189 cases (0.28 per cent.) of congenital luxation of the hip joint. There was abundant evidence of a hereditary tendency. Recessive characteristics were especially noticeable.

Zentralblatt für Gynäkologie, Leipzig

Aug. 27, 1921, **45**, No. 34

Experiences with Treatment of Puerperal Fever. Bauereisen.—p. 1205.
Trials of Intravenous Antiseptics. H. Becker.—p. 1218.
Turpentine in Treatment of Disorders of the Adnexa. Seelmann.—p. 1221.
Trypaflavin Intravenously in Gonorrhea in Women. W. Haupt.—p. 1225.
*Posture for Protection of Perineum. C. Abernetty.—p. 1231.

Objections to Left Lateral Posture for Protection of Perineum.—Abernetty reports six cases of asphyxia in infants, four of which proved fatal either during the protection of the perineum or immediately after delivery. He aims to prove that the lateral position does not permit careful observation of the fetal heart sounds, this being especially true in the first cephalic presentation. The statistics of hospitals show that the number of children born in marked asphyxia, unnoticed before birth, totals about 1 per cent., and he maintains that the percentage would be much lower if the women were in the dorsal position instead of the lateral while the attention is focused on protecting the perineum. The mortality of children dying from asphyxia not diagnosed during protection of the perineum equals 0.2 per cent.

Zentralblatt für innere Medizin, Leipzig

Sept. 3, 1921, **42**, No. 35

Microscopic Behavior of Capillaries in Roentgen Erythema is Gage of Individual Sensitiveness to the Roentgen Rays. O. David.—p. 697.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Sept. 17, 1921, **2**, No. 12

Embryologic Study of Lacrimal Passages. J. van der Hoeve.—p. 1410.
*Protein Therapy in Ophthalmology. L. Bierens de Haan.—p. 1421.
Potter-Bucky Diaphragm in Roentgenology. F. G. de Wilde.—p. 1430.
Stability of the Erythrocytes. W. Weck.—p. 1433.
Leukemia and Pregnancy. R. J. T. Meurer.—p. 1440.

Protein Therapy in Ophthalmology.—De Haan comments on the favorable reports that are being constantly published on the effect of parenteral injection of milk in various eye affections. He says, however, that we must try to find some substance that will give the same good results without the disagreeable by-effects sometimes noted with milk. These are a very rapid softening up of a corneal abscess and its perforation; also an abscess forming at the point of injection. Some other point than a gluteal muscle might be preferable for the injection. With tuberculosis, scrofula and typhoid, there is liable to be a focal reaction; it may accelerate a cure or may entail a cavity. With typhoid, an apical catarrhal process has been speeded up, and scrofulous children have been known to have fever for weeks after the parenteral injection. Heart and respiratory disturbances have also been noted and anaphylactic shock. With the status lymphaticus and asthenia the injections are liable to cause more disturbance than under other conditions. From 5 to 10 c.c. of milk is the dose employed for adults. The febrile reaction begins in four hours and reaches its height by the eighth or tenth. The higher the reaction, the greater the beneficial effect, as a general rule.

Hospitalstidende, Copenhagen

Sept. 21, 1921, **64**, No. 38

Extrapyramidal Syndromes. A. Wimmer.—p. 593. Conc'n.

Sept. 28, 1921, **64**, No. 39

*Blue Sclerotics with Fragile Bones. O. Blegvad and H. Haxthausen.—p. 609.
Roentgenology at Copenhagen Hospital. E. Collin.—p. 616. Conc'n No. 41, p. 646.

Oct. 5, 1921, **64**, No. 40

Silversalvarsan. H. Boas.—p. 625. Conc'n No. 41, p. 641.

Oct. 19, 1921, **64**, No. 42

Surface Tension as Factor in Bactericidal Property. T. Hansen.—p. 657. Conc'n No. 43.

Blue Sclerotics with Fragile Bones.—Blegvad and Haxthausen have compiled from the records a number of families in which 76 of the 156 members had blue sclerotics, and 24 of the 52 who had their bones examined displayed a tendency to spontaneous fracture. The hereditary appearance of these anomalies shows that they form a dominant according to Mendel's laws. Deafness is also common in these families. They describe another family of the kind, the first to be reported in Denmark. The blue sclerotics were noted in three generations in 10 of the 23 members, and all those affected, except the grandparent, had fragile bones. The member of the family examined in detail was a young woman, and she presented in addition zonular cataract, and a peculiar skin affection consisting in patches of atrophy of the skin. She had had nine fractures from very slight traumas.